“RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY: CASE CONTROL STUDY”

Dissertation submitted to

THE TAMIL NADU DR. M. G. R. MEDICAL UNIVERSITY

in partial fulfilment of the requirements for

M. D (PSYCHIATRY)

BRANCH XVIII

THE TAMILNADU

DR. M.G.R. MEDICAL UNIVERSITY,

CHENNAI, TAMIL NADU.

APRIL 2015

CERTIFICATE

This is to certify that the dissertation titled, "**RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY : CASE CONTROL STUDY"** is the bonafide work of **Dr AKANKSHA SONAL**, submitted in partial fulfilment of the requirements for M.D. Branch – XVIII [Psychiatry] examination of The Tamilnadu Dr. M. G. R. Medical University, to be held in April 2015.

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The Dean,
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CERTIFICATE of GUIDE

This is to certify that the dissertation titled, "**RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY : CASE CONTROL STUDY"** is the original work of **Dr. AKANKSHA SONAL**, done under my guidance submitted in partial fulfilment of the requirements for M.D. Branch – XVIII [Psychiatry] examination of The Tamilnadu Dr. M. G. R. Medical University, to be held in April 2015.

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DECLARATION

I, **Dr. AKANKSHA SONAL.**, solemnly declare that the dissertation titled, **"RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY : CASE CONTROL STUDY",** is a bona fide work done by me at the Institute of Mental Health, Chennai, during the period from August 2014- September 2014 under the guidance and supervision of **Dr. JEYAPRAKASH. R., M.D., D.P.M**, Professor of Psychiatry, Madras Medical College.

The dissertation is submitted to The Tamilnadu Dr. M. G. R. Medical University towards partial fulfilment of requirement for M.D. Branch XVIII [Psychiatry] examination.

Dr. AKANKSHA SONAL

Place:

Date:

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INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3

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CERTIFICATE OF APPROVAL

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Dear Dr. AKANKSHA SONAL,

The Institutional Ethics Committee has considered your request and approved your study titled " **RISK FACTORS FOR SUICIDAL SELF DIRECTED VIOLENCE IN ELDERLY: CASE CONTROL STUDY " No. 21082014.**

The following members of Ethics Committee were present in the meeting held on **05.08.2014** conducted at Madras Medical College, Chennai-3.

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11.	Tmt.Arnold Saulina, M.A., MSW.,	: Social Scientist

We approve the proposal to be conducted in its presented form.
The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary, Ethics Committee

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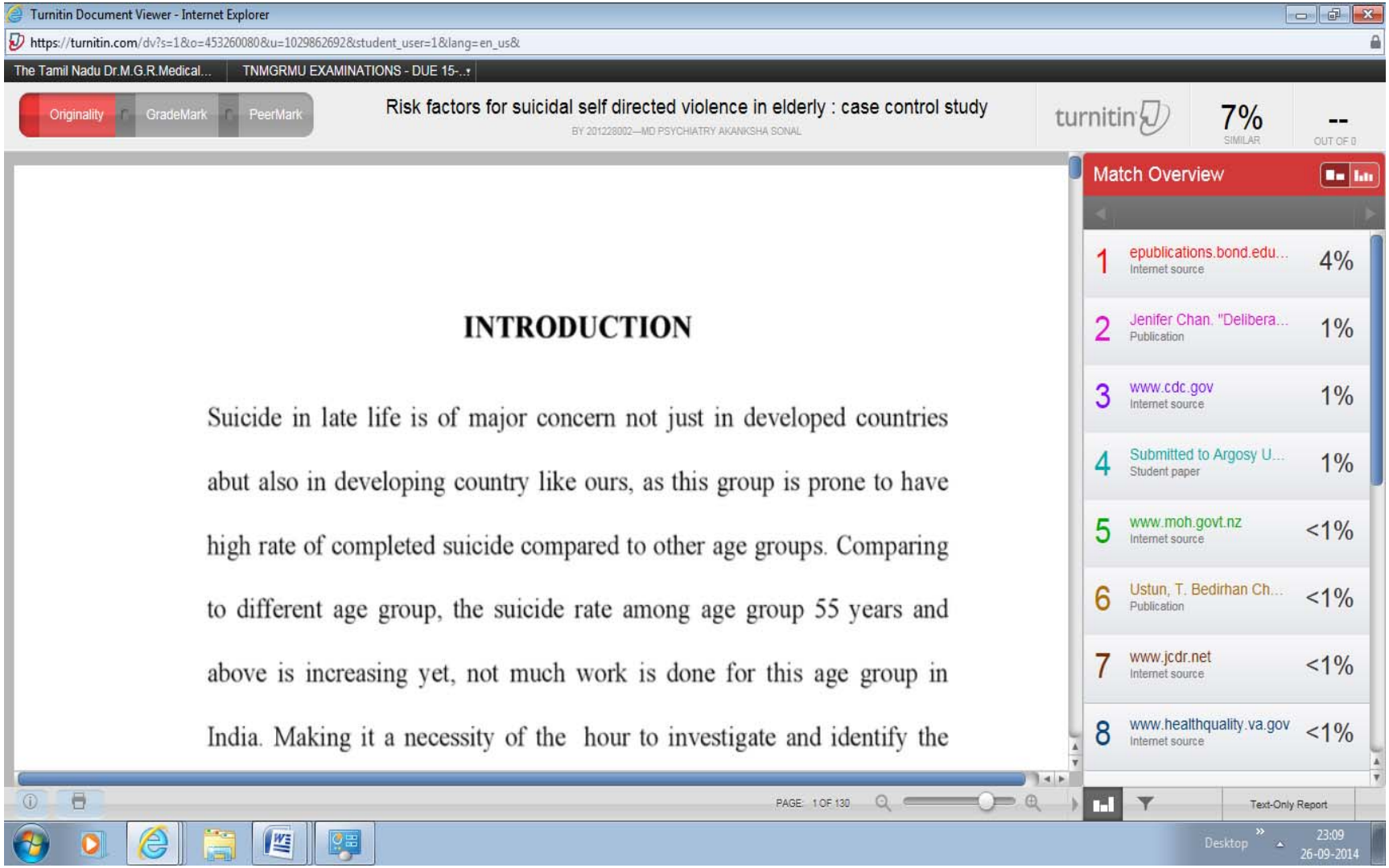
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Suicide in late life is of major concern not just in developed countries abut also in developing country like ours, as this group is prone to have high rate of completed suicide compared to other age groups. Comparing to different age group, the suicide rate among age group 55 years and above is increasing yet, not much work is done for this age group in India. Making it a necessity of the hour to investigate and identify the
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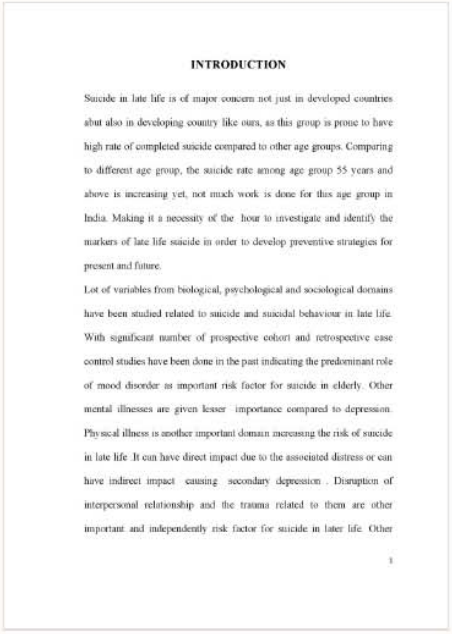

INTRODUCTION

Suicide in late life is of major concern not just in developed countries abut also in developing country like ours, as this group is prone to have high rate of completed suicide compared to other age groups. Comparing to different age group, the suicide rate among age group 55 years and above is increasing yet, not much work is done for this age group in India. Making it a necessity of the hour to investigate and identify the markers of late life suicide in order to develop preventive strategies for present and future.

Lot of variables from biological, psychological and sociological domains have been studied related to suicide and suicidal behaviour in late life. With significant number of prospective cohort and retrospective case control studies have been done in the past indicating the predominant role of mood disorder as important risk factor for suicide in elderly. Other mental illnesses are given lesser importance compared to depression. Physical illness is another important domain increasing the risk of suicide in late life .It can have direct impact due to the associated distress or can have indirect impact causing secondary depression . Disruption of interpersonal relationship and the trauma related to them are other important and independently risk factor for suicide in later life. Other

1

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ABBREVIATIONS

Self directed violence	SDV
Centre for disease control and prevention	CDC
World Health Organization	WHO
National Crime Records Bureau	NCRB
Geriatrics Depression Rating Scale	GDS
Becks hopelessness Scale	BHS
Impulsivity rating scale	IRS
Level of expressed emotion	LEE
General assessment of functioning	GAF
World Health Organization	
Disability Assessment Schedule	WHO DAS 2

RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY: CASE CONTROL STUDY

ABSTRACT

BACKGROUND:

Suicide is a major public health concern for older adults, who have *higher rates of completed suicide* than any other age group in most countries of the world. With older men are at greatest risk, near by equal incidence of attempted and completed suicide.

Lot of variables in different *domains* (*mental, physical, and social)*have been correlated with Self directed violence in older adults. *Affective disorder* is most powerful independent risk factor for suicide in elders. Other mental illnesses play less of a role. *Social ties and their disruption* are significantly and independently associated with risk for suicide in later life, relationships between which may be moderated by a rigid, anxious, and obsessional personality style. *Stressful life events*, such as family conflicts, separation, bereavement, *somatic illness* and financial problems are common antecedents of suicide.

AIMS AND OBJECTIVES:

1. To estimate multi-dimensional risk factor for suicidal self directed violence in elderly.
2. To compare the risk factors between subjects with suicidal self directed violence and that of age and sex matched controls (with no history of suicidal self directed violence).

MATRERIALS AND METHOD :

The current study was a case control study, conducted at, Rajiv Gandhi Government General Hospital, Chennai. The cases reporting to the casualty with self-directed violence, satisfying inclusion criteria after their informed written consent included in the study. Equal number of age and sex matched controls were included for comparison .Details were collected according to pre decided protocol in four domains socio-demographic variables , psychiatric and mental illness variable, psychological variables and sociological, using standard and validated questionnaire .Collected data were analysed using SPSS version 20 parametric variables were compared using independent –t test , non –parametric variables using chi-square test followed by univariate and multivariate regression analysis.

Results and Discussion

Important risk factors obtained after the multivariate analysis followed by hierarchical linear logistic regression are – being single, male gender, with history of mental illness previous suicidal behavior, use of alcohol, suffering from physical illness with associated functional impairment and disability, psychologically impulsive, with presence of significant score on depression and hopelessness, criticism, negative life event and poor social support.

Keywords : Suicidal self-directed violence, risk factors, elderly

INTRODUCTION

Suicide in late life is of major concern not just in developed countries abut also in developing country like ours, as this group is prone to have high rate of completed suicide compared to other age groups. Comparing to different age group, the suicide rate among age group 55 years and above is increasing yet, not much work is done for this age group in India. Making it a necessity of the hour to investigate and identify the markers of late life suicide in order to develop preventive strategies for present and future.

Lot of variables from biological, psychological and sociological domains have been studied related to suicide and suicidal behaviour in late life. With significant number of prospective cohort and retrospective case control studies have been done in the past indicating the predominant role of mood disorder as important risk factor for suicide in elderly. Other mental illnesses are given lesser importance compared to depression. Physical illness is another important domain increasing the risk of suicide in late life. It can have direct impact due to the associated distress or can have indirect impact causing secondary depression. Disruption of interpersonal relationship and the trauma related to them are other important and independently risk factor for suicide in later life. Other factors of concern are predominant cluster c personality traits e. g

anxious, obsessive or rigid variants. Added to them, is the effect of various negative life events, such as conflict in the family, separation, death of close one or separation from close one, physical illness and financial problems are common triggers of suicide.

Despite the fact of lethal attempts are usually done by elderly, our major volume of literature on suicide and suicidal behaviour is filled with studies on younger individuals or overall mixed population. Requiring the well designed study focusing this target population to find out the cause and risk factor of suicidal behaviour. Additional research is required to explain the exact interactions between psychological, sociological and emotional factors in determining the risk for suicide in late life.

In order to decrease the fatal outcome related to suicide and related behaviour for this special age group we need better and improved surveillance strategies to improve our knowledge and understanding about it for developing better preventive and intervention type of research cycle, across the globe over the time line, with improved auditing system.

We too have to keep in the mind the difficulties in conducting studies on this special group. Some of the difficulties are - low prevalence rate, high rate of fatal outcome, under reporting due to associated shame and guilt. With this little background we planned this study, to examine various risk factors for attempting suicide in late-life and how these

factors are related independently as well dependent on each other for ultimate outcome.

This study will be conducted with the help of general information collected directly from older subjects with non fatal suicidal self directed violence, and by comparing them with age and sex matched controls without any history of suicidal self directed violence. As it help us to shed some light on the process of self directed violence in this age group. And further to get some common features or recognizable pattern, that can enlighten us about the process of self directed violence in late life. Even in future can direct us in formulating preventive strategy targeting the risk factors.

REVIEW OF LITERATURE

In this section literature review will be covered in three major sections:

1. **Section one** – This will be covering evolution of current definition of suicide and introduction to phenomenon of suicide in India and World with emphasis on late life suicide.

2. **Section two** - Overview of suicide and suicidal behaviour including different theories of suicide across the time line, important theories will be discussed and critiqued. This section will be concluded with different models discussed to explain suicidal behaviour in late life. With emphasis on most accepted integrative approach of suicide which is used in the research design for this study.

3. **Section three** - Finally, third and last section will be covering the review about important identified risk factors for suicide across the literature for this age group. An overview of empirically identified suicide risk factors will be reviewed.

This section will be concluded with developing research hypothesis for the present study.

SECTION ONE

1. a. Current trend from - Suicide to Suicidal Self Directed Violence - Definition of Suicide as used in present study

Self-Directed Violence (SDV) is of major concern not just for India but all most every part of the globe. It is a major public health problem throughout the World. But as Suicide and suicidal behaviour is explained world - wide under multiple terminology and heading creating conceptual difficulty in research and uniform communication across the world.

Recognizing this problem and the urgent need of strong data collection in regards to this behaviour, Centre for Disease Control and Prevention (CDC) ’s National Centre for Injury Prevention and Control (NCIPC) started working in this direction to improvish this conceptual problems. The CDC concentrated its efforts over this issue and finally come up with standard definitions for SDV research in December 2011. This process of developing standard and uniform definitions is the final out-come of multiple consultative procedure addressing the scientific issues related to multiple definitions used for years in different part of the world for research and data collection.

Finally with the support of various international bodies as IASP, WHO, CANADIAN, AUSTRALIAN suicide prevention group and lots others, following definitions for SDV came to existence from CDC. With the positive hope to promote use of uniform and standard terminology and definitions to have a common language of expression scientifically among researchers, clinicians, and others working in this field of suicidology or SDV.

SDV is not a single entity, but this behaviour in itself includes various range of behaviours. With due importance not only to the suicidal behaviour but also to the mere thought of, plan of, intent of violence against the self.

Definitions as per literature -

SELF-DIRECTED VIOLENCE (SDV)

“Behavior that is self-directed and deliberately results in injury or the potential for injury to oneself

This excludes behaviours – such as parachuting, gambling, substance abuse, tobacco use or other risk taking activities, such as excessive speeding in motor vehicles. As these complex behaviours are not recognized by the individual as behaviour intended to destroy or injure the self, though can be risk factor for SDV.

SDV is further categorized as -

Non-suicidal SDV

Suicidal SDV

Non-suicidal SDV

Self-directed and deliberate behaviour resulting in injury or the potential for injury to oneself.

With no evidence, whether implicit or explicit, of suicidal intent.

Suicidal SDV

self-directed and deliberate behaviour resulting in injury or the potential for injury to oneself

with evidence of (implicit or explicit) suicidal intent.

Undetermined SDV

self-directed and deliberate behaviour resulting in injury or the potential for injury to oneself.

Suicidal intent is unclear based on the available evidence.

Suicide attempt

self-directed potentially injurious behaviour with an intent to die but ended in non –fatal outcome

Interrupted SDV – by self or by other

By other - A person trying to injure self but is stopped by another person prior to fatal injury. The interruption can occur at any point during the act such as after the initial thought or after onset of behavior (Posner et al., 2007).

By self (in other documents may be termed “aborted” suicidal behavior) - A person takes steps to injure self but is stopped by self prior to fatal injury.

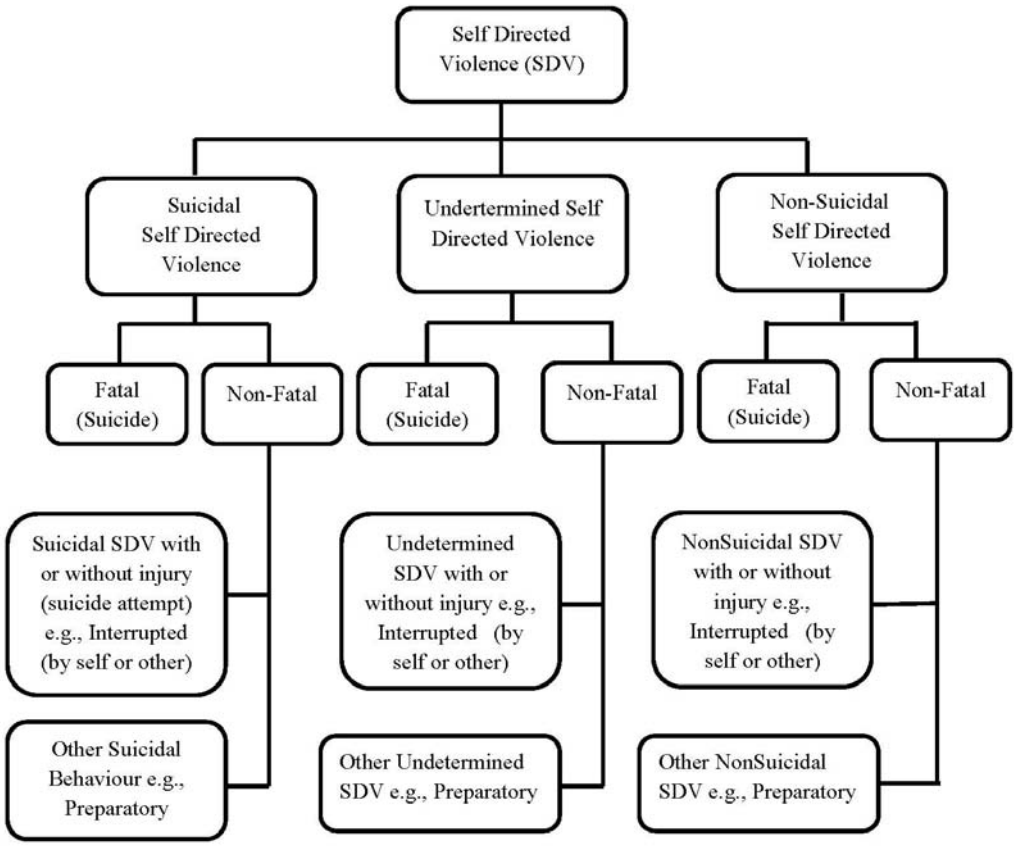
Some preparatory acts are –

Acts or preparation towards making a suicide attempt, but before potential for harm has begun. This can include anything beyond a verbalization or thought, such as assembling a method (e. g., buying a gun, collecting pills) or preparing for one’s death by suicide (e. g., writing a suicide note, giving things away).

Suicide is defined as death as a out come SDV with intention to die as result of the act done.

. . . . completed suicide, failed suicide, non fatal attempt, parasuicide, successful suicide, suicidality, suicidal gesture, deliberate self harm so far so on. . are out dated as per current review.

Flow chart explaining SDV in comprehensive way –



(Source – CDC website, sdv surveillance manual.)

1. b. Overall Trends of Suicide in India and World

1. b. 1. According to WHO nearly ONE MILLION people die from suicide every year across the globe. With 84 % from low and middle income countries, and majority from south east asian countries and Africa. As per the latest WHO report published in may 2014 India's contribution is about 39% of over all suicide burden. This high rate after under reporting of about 25% (NCRB 2012).

Observing the rate of suicide across different age group, we found to have increasing trend of suicide in the late life. With fact is well documented in various international multicenter studies. WHO multicenter study from Europe gave rate in late life as – 61. 4/lakh (De Leo et al. 2001), Australia 4. 1% (Ticehurst et al., 2002). Over the four year observation time period of 1989 – 1992 of WHO multicenter study, it was found that there is fall in suicide rate for younger while vice versa for elderly. (Schmidtke et al., 1996) figure increase of 11% for male and 9% for female, similar results were reported from 10 year follow up study (Hawton et al., 2003).

According to Indian data, the rate of elderly suicide is 20. 6 % in 60 years and above with male predominating over female (NCRB 2012).

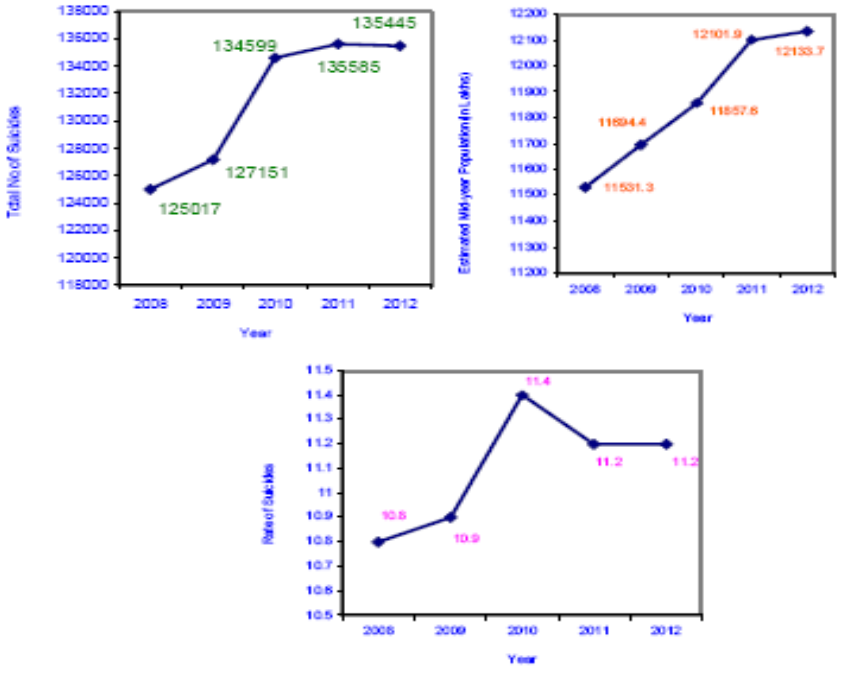
Limitation of these rates presented here - from small scale, inconsistency in definitions used data collection and reporting, single center limited, lack of comparisons studies across the countries, lacking national representative sample (Patel V et al., 2012).

1. b. 2. Trends in suicide across the last five NCRB data –

Serial number	Year	Total number of suicide	Estimated mid-year population	Rate of suicide
1	2008	125017	11531. 3	10. 8
2	2009	127151	11694. 4	10. 9
3	2010	134599	11857. 6	11. 4
4	2011	135585	12101. 9	11. 2
5	2012	135445	12133. 7	11. 2

Incidence of suicide, growth of suicide and rate of suicide –during 2008-2012

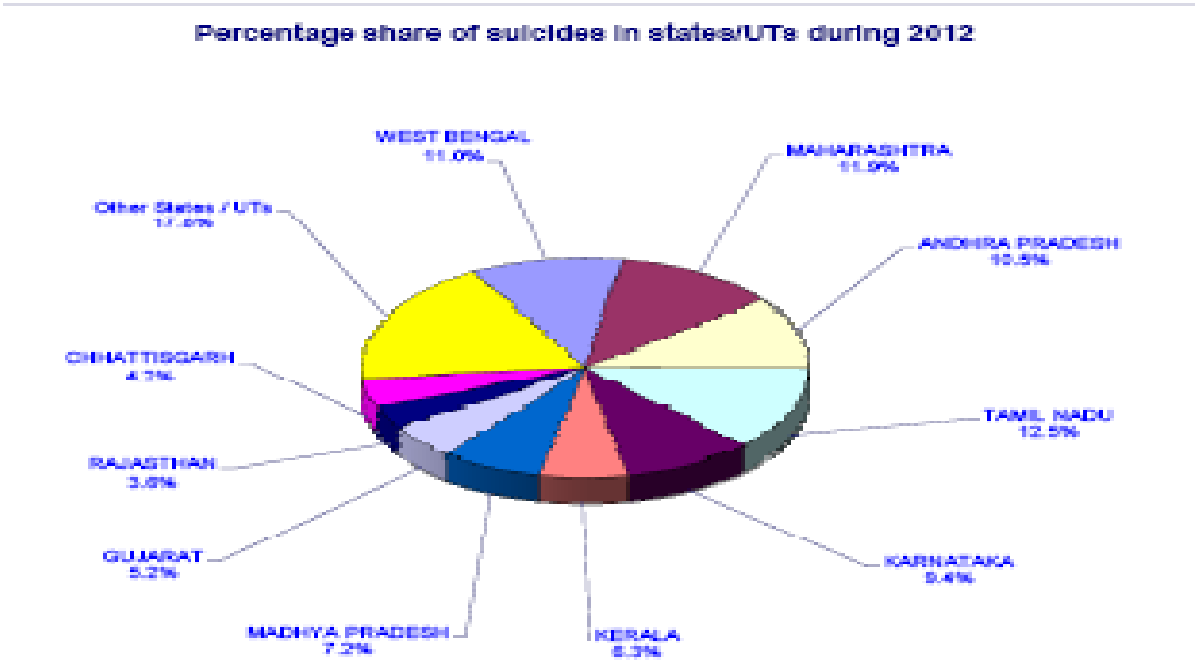
NCRB 2012 TABLE showing suicide rate over 2008-2012. The overall number of suicides in India 1 35 445/100000 (NCRB 2012). This table is followed by charts representing the trends of suicide in India along various parameters.



SUICIDE TRENDS OVER THE PAST FIVE YEARS

– total number of suicide, – per mid year population, – rate of suicide

States wise suicidal rate with Tamil Nadu dominating the national suicide rate in last year (12.5%) followed by Maharashtra and West Bengal. Even in elderly or late life suicide is highest in Tamil Nadu of 16.2%



Suicide trends across the major studies Chennai, Mumbai, Banglore and Delhi comprises of 35. 6% of total suicide.

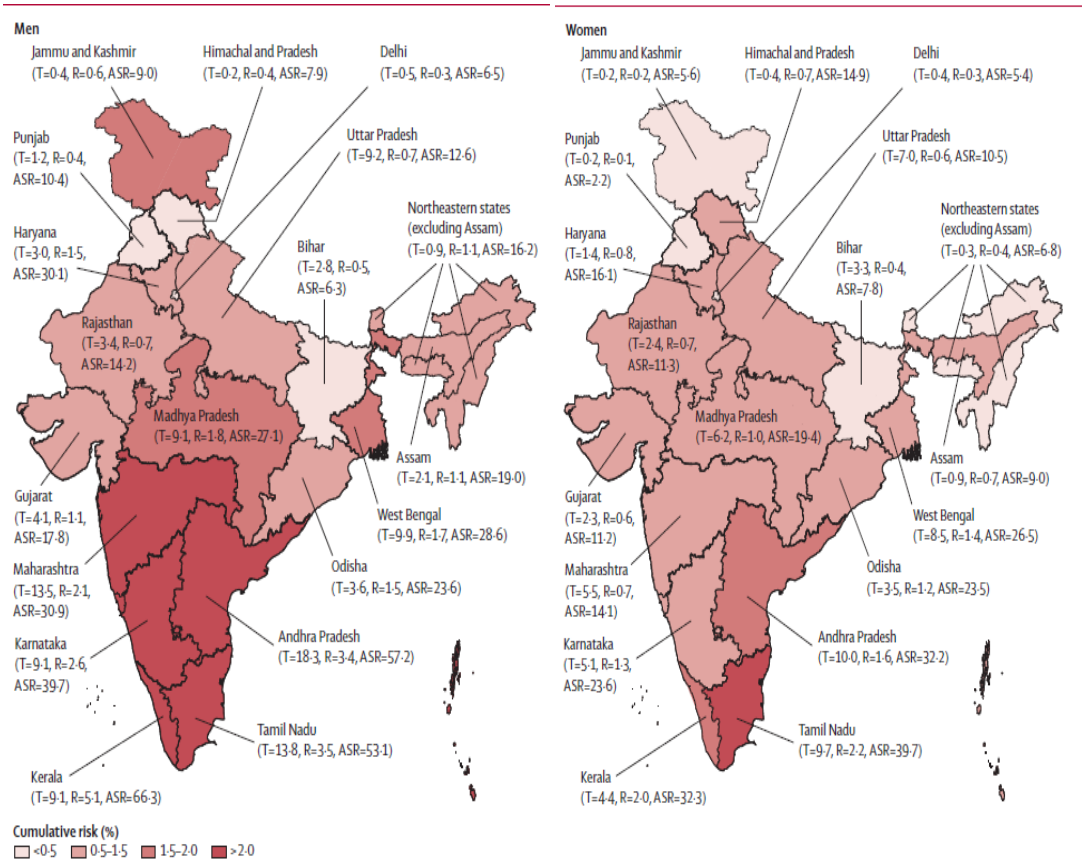
Table – 2 (L)

Year	Suicides in cities	Cities share to all India	Rate in cities	% Variation over previous year (incidence)
2008	13,071	10.6	12.1	– 8.8
2009	13,503	10.6	12.5	3.3
2010	13,675	10.2	12.7	1.3
2011	18,280	13.5	11.3	@
2012	19,120	14.1	11.9	4.6

@ Number of mega cities has been increased to 53 in 2011 (from 35 in 2010) as per Population Census 2011.

1. b. 3. Gender difference in suicide.

Presents chart represents the suicide rate in India by gender.



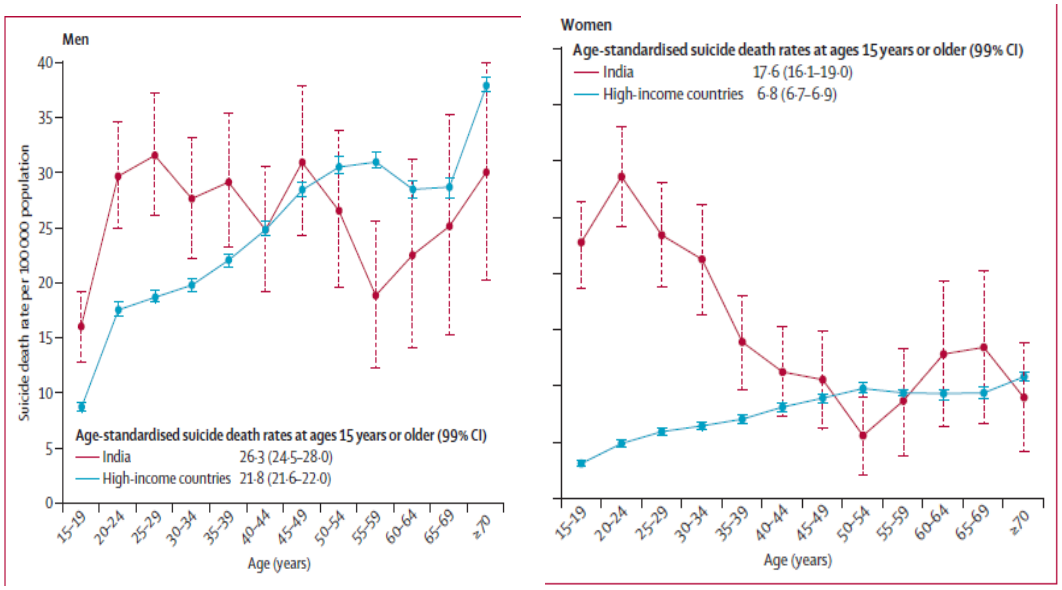
As per gender difference in the rate of suicide, male predominates world wide with few exemptions like China. Gender ratio of suicide (males over females) global was 3. 9:1 in 2000(WHO, 2001)higher differences were observed in developed countries with ratio of 5:1 reporting from U. K, U. S. A, New Zealand e. t. c (WHO, 1999). and ratio of less than 2:1 from some Asian group of nations

India 66. 2:33. 8 (NCRB 2012).

Various explanations given in literature of low rate of suicide in female are First, their attempts scores low on lethality, as they use more of reversible mode. Second, low to nil exposure to alcohol. Third, low impulsivity with no intoxication (Brent et al 1999).

But due to changing trends and involvement of females in substance misuse, and other high risk behaviour, leads to decrease in this gap. (Beautrais, 1998, 1999b, 2000a).

1. b. 4. Age and suicide



SUICIDE TRENDS OVER DIFFERENT AGES INDIA VERSES HIGHER INCOME COUNTRIES (Vikram Patel et al 2012)

The attempted suicide-to-suicide ratio for older adults has been reported to vary between 2:1. (**De leo et al., 2001)**

Suicide rate in our country found to have bimodal presentation first peak from 15 – 25 years of age and other peak from 50 – 55 and above increases with age. Making us to plan for this study.

1. b. 5. Marital status

Majority of study supports the increased suicide rate in older adult who are single, widowed or never married, or separated except for two studies (Chiu et al 1996 and Beautrais et al., 2002). Which is reverse of those below age 60 year, where marriage increases the risk of suicide (Ticehurst et al., 2002).

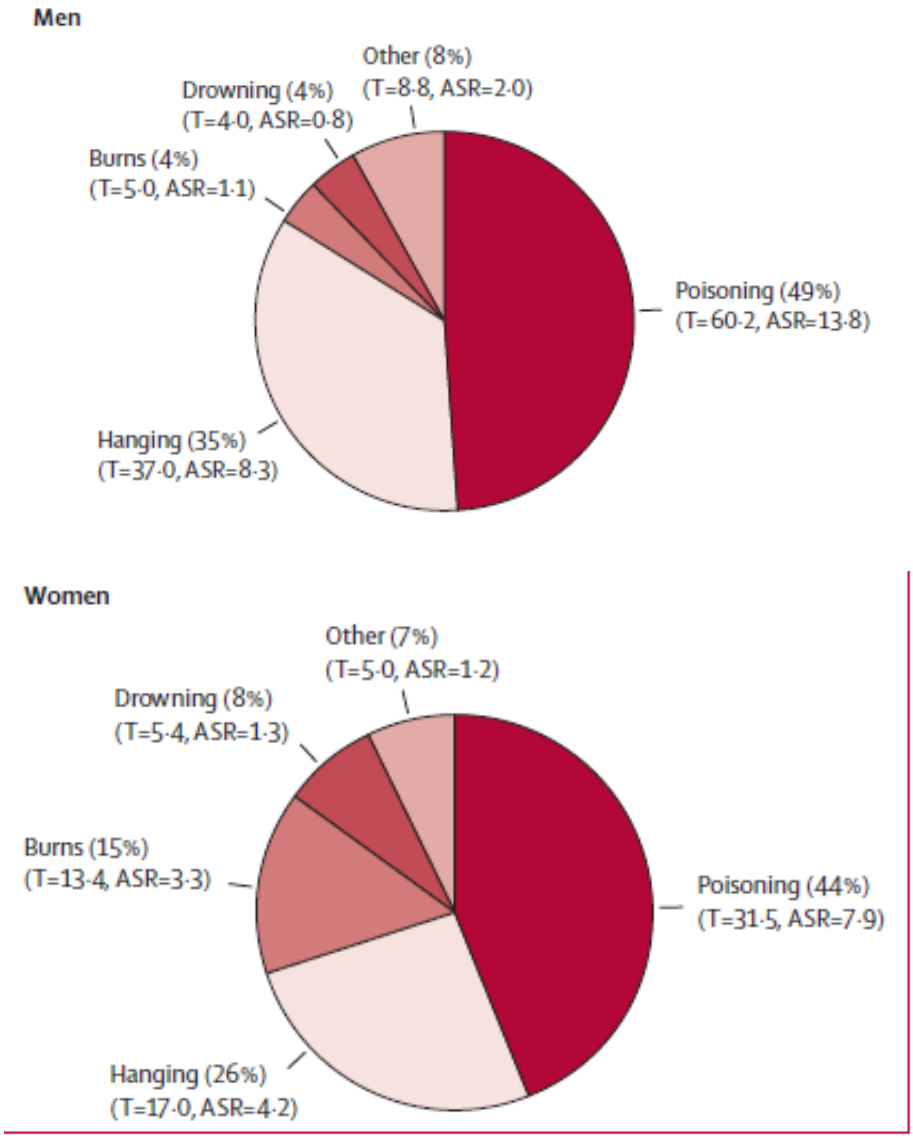
1. b. 6. Socio economic status

Not much of literature support is available to examine effect of socio economic status and suicidal behaviour in late life.

1. b. 7. Educational level

As per literature educational status has no significant impact on the suicidal behaviour. (Takahashi et al., 1995; Szanto et al., 1998 ; Beautrais, 2002).

1. b. 8. Method of suicide



METHODS OF SUICIDE FOR MALES AND FEMALES

(mixed age pie chart).

Method of suicide

In India, unlike other countries there is not much difference in the methods employed across the gender. With poisoning followed by hanging is the most common mode across the decades. (Venkoba Rao 1983, Gajalakshmi et al 1993).

Just slight inclination among females for using drug over dose opposite of male preference of harming themselves using sharp objects. (De Leo et al 2001; Osvath et al 2002)

With the advent of latest preventive strategies for suicide like that of MODEL OF MEANS REDUCTION (used in India, Sri Lanka, China) makes it important to know the methods employed (e. g., Chuang & Huang, 1996; Hawton et al., 1998). But nevertheless we have to give equal significance to psychological and cultural back ground of the population as it decide the choice of suicide method lot of times. (Gould et al., 2003).

1. b. 9. Suicide intent and lethality

Very Few studies are reported in literature discussing intent and lethality of suicide in late life (Pierce, 1996, Szanto 1998). Even in those studies their focus was on emotional characters associated with late life suicide. With conclusion - association between low intent and low anger sub scores, while high lethality is related with hostility and low guilt (Seidlitz et al 2001).

1. b. 10. Burden of suicide on society and economy *:*

According to WHO suicide is the 8^{th} most common cause of burden in society. Suicide have important implications in terms of the

cost to society. Various ways to calculate burden are there one such method is Year of Life Lost (YLL), used in few studies (Yip et al., 2003)

Suicide not only leads to emotional break down in relatives and friends, but it also causes financial burden to society. Four factors associated with financial burden caused by suicide are -

(1) Associated Medical expenses

(2) Loss of productivity of the individual

(3) Loss of productivity of the grieving loved ones

(4) Loss of wage if attempted before retirement

(Palmer, Revicki, Halpern et al., 1995; IOM, 2002). But we lack any literature to support this finding from our country.

SECTION TWO

An Overview of Suicidal Behaviour

2. A. Suicide along the time line -

Historically Suicide, suicidality and suicidal behavior has been glorified or condemned through the ages and cultures. Christian church declared it unacceptable (St. Augustine). Japanese samurais are prone to practice– *hara-kiri*. From our own mythology Upanishads condemned suicide while Jainism participate in similar behavior with name of *Sallekhana*. Till now different form of culturally accepted practices are going on in different parts of our country eg. –*Sati and Johar* from the state of Rajasthan.

The Greek philosopher Plato considered suicide as disgraceful and according to him individuals involved in such behaviour should be buried in unmarked graves. However, Plato stressed that there were some exceptions when suicide was excused; 1. in persons with morally corrupted mind, 2. suicide as a result of unavoidable personal misfortune and 2. suicide due to shame from unjust deeds. Aristoteles concluded that suicide is an act against the state. Emile Durkheim, French sociologist viewed suicide as a social ill reflecting human alienation, lack of social norms and other attitudinal products of the modern society.

Through history suicidal behaviour has been an issue with a strong taboo (Beskow, 2010). Nowadays suicide is more openly discussed although the taboo still exists. The current debate about euthanasia is strongly associated with the questions regarding personal freedom and the right of self-determination.

2. B. Theories of suicidal behaviours –

This sub section will give a brief introduction about different theories of suicide to help us in understanding this behaviour complex with special emphasis on our selected population e. g. elderly. At the end it will help us in generating study hypothesis. .

Definitions of Suicidal Behaviours

Suicide is a Complex Behaviour which usually undergoes through Multiple Stages.

Suicidal ideation

⇩

Suicide gestures

⇩

Suicide threats

⇩

Suicide plans

⇩

Suicide attempts

⇩

Completed suicide. (Reynolds,1987)

Due to “misconceptions and great difficulties to compare results from different studies” (Goldston, 2000). CDC come up with an idea to develop an Operational Criteria for the Determination of Suicide (OCDS) to handle complexities of this behaviour. As already discussed in the previous section explaining the current definition and terminology for suicide and related behaviour as developed by major work group working in this field uniformly explaining by SELF DIRECTED VIOLENCE. (CDC, 2011)

2. B. RESEARCH IN FIELD OF SUICIDE AND SUICIDAL BEHAVIOUR

Research done in this field is basically comprises of two different approach -

1. The studies from earlier century concentrate more on theoretical models of suicide.

   They were basically classified as socio – cultural and psychoanalytical model with emphasis on explanatory approach.

2. The studies from last two decades are found to be focussed on the causes and risk factors for suicide (Maris et al., 2000).

   With socio – political and cultural revolution in the society leads to the development of individual model of CENTRALITY and

BOTTOM UP model (health promotion, disease prevention, focussing on molecular basis (IOM, 2002). to explore and explain complex phenomenon of suicide.

2. B. 1. Socio - cultural approach :

Le Suicide (1897) by Emil Durkheim break new ground to study sociological explanation of suicide. According to him suicide is outcome of individuals interaction with his environment e. g society. And its incidence is related to the individuals social integration. He further conceptualizes two dimensional approach - SOCIAL INTEGRATION AND SOCIAL REGULATION. The imbalance among these two dimensions will lead to fatal out come of suicide. As per Durkheim suicide is of four types on the basis of his two dimensions as –

SOCIAL INTEGRATION – (high) ALTRUISTIC and (low) EGOISTIC.

SOCIAL REGULATION – (high) FATALISTIC and (low) ANOMIC.

(Durkheim, 1897/1951).

Criticism – constricted approach considering only one aspect ei. sociological to explain a complex behaviour like suicide. (Leenaars et al., 1997).

2. B. 2. Psychoanalytic approach. *:*

Latter half of 19th century considered as the era of psychoanalysis. In this time Durkheim's approach towards suicide was questioned. And this lead to Psychoanalytic theories of suicide stating **suicidal behaviour arises from individual and intrapsychic sources** untouched by social forces.

Major land mark work done are –

2. a. Freud (1917/1963) – according to him human behaviours are pre determined through their childhood, stages of psychosexual development, unaffected by social factors. He explains psycho analytically SDV or suicide as a behaviour that **represents unconscious hostility directed toward the introjected love object** (Freud, 1917/1963). (*Mourning and Melancholia*)

2. b. Menninger - in the book ***Man Against Himself*** (1938) written by him further elaborated Freudian approach, and given three basic dimension leading to suicidal behaviour - hate, depression, and guilt. According to him suicide involves:

(1) a wish to kill – murder

(2) a wish to be killed - a murder by the self

(3) the wish-to-die.

2. c. Litman (1989) - Further extension to psycho analytical theory of suicide was given by Litman, according to him suicide is the outcome of multiple intrapsychic factors for example rage, guilt, anxiety, dependency, helplessness and hopelessness not just that of hostility.

Criticism - overtly preoccupation with psychoanalysis as a mode of treatment or cure to mental illness, and complete denial of sociological factors (Maris et al., 2000).

Second half of twentieth century – the models came in this part of century were-

2. B. 3. Psychological approach.

In this approach psychoanalytical model was taken one step ahead. This approach gives due importance to one's psychological make-up (Maris, 1981). Taking common model of focusing psychological needs leading to suicide.

Shneidman (1996) he mentions about two terminology in his work – one as ***psychological pain (psychache)***" SDV is an outcome of psychological distress. Other term explain the multi -faceted model of suicide – that can not be explained using a single domain or dimension. In short, this model explains SDV as a multi-disciplinary issue, a fatal outcome of one's psychological pain.

2. B. 4. Biochemical approach. *:*

Biologically suicide related behaviour is explained using biochemical changes. This model got supported by various literature from autopsy and neurobiological studies. Various studies done have found consistent role of serotonin and its metabolite abnormality in individuals with SDV. Anatomically the important areas showing abnormality in the brain are brain stem, frontal cortex, especially ventral part of pre frontal cortex (Traskamn-Bendz & Mann, 2000). Lower level of serotonin and its metabolite are repeatedly observed in studies assessing CSF (Pallaniappun., 1994). Other substances linked to suicidal behaviour or impulsivity is cholesterol levels but results are not consistent. Basically the imbalance in these neurochemicals leads to dys-regulation of human behaviour. This dysregulation will lead to difficulty in self-control and behavioural inhibition, making them prone for at risk behaviour at time of stress. (Stress- diasthesis model).

There is growing evidence from twin studies to molecular markers (journal of molecular psychiatry 2013) but most of them are still in its infancy, it suggests that suicidal behaviours are not simply a response to environmental adversity but also reflect individual genetically determined vulnerabilities to these behaviours. This stand of research is clearly linked to advances in technology (Hawton & van Heeringen, 2000).

2. B. 5. Psychiatric epidemiology approach.

The main aim of this approach is to find out link between various psychological and biological risk factors and self directed violence. Various statistical model explaining suicide has come up in last decade. the main focus of these models is on individual level risk and protective factors. According to results from various psychiatric based epidemiological research 90% of suicidal behaviour is outcome of mental illness in major part of suicide by 90% psychiatric conditions are playing dominant role. major mental illness involved are mood disorders (depression), substance disorders, anxiety disorders, personality disorder like antisocial and conduct disorders playing major role, other illness like bipolar and psychosis are having lesser contribution. The outcome of these studies shows the predominant role played by mental illness and minor role for other risk factor s like that of social and financial crisis (Cavanagh et al, 2003, vijaykumar et al 2009, Sethi et al).

2. B. 6. Public health approach.

This approach discuss about three different models - the mental health model, the injury prevention model, and the social intervention model.

6. a. The **mental health model** – According to this model psychiatric illness is the key predisposing risk factor. And its early detection and treatment is must and is the basic path to control suicide related behaviour. Mental illness can play direct role but many a times are indirectly playing robust role. (IOM, 2002).

6. b. The **injury prevention model** –According to this model suicide is a behaviour of intentional self injury. As the model taken by CDC and explained in the early part of literature review. This model based definition are used in current research work, to estimate risk factors for suicidal SDV in elderly. This model with focus on injury prevention strategies give due importance to means reduction approach to control suicide. . (Hawton et al., 2000).

6. c. The **social intervention model –**According to this model suicide is the outcome of change in the society. especially changes occurring at large scale level in sociological and economical front. Even some times explained by the heading of macroeconomic theory of suicide (Stack, 2000a, 2000b).

From the list of theories explained, with their advantages and disadvantages, we can conclude that not a single approach can explain this complex behaviour as whole (IOM, 2002 and Maris et al., 2000).

The upcoming works in this field are based on assessing factors responsible for suicidal behaviour at the individual level. And to use the obtained finding at population level. With focuses on the need of conceptualizing an integrative approach covering all factors,

leading to the complex behaviour of suicide.

2. B. 7. Integrative approach. *:*

The integrative model of suicide as developed by Maris in 2000, divides the factors responsible for SDV under different domains. this model not only give the qualitative details but also quantitative contribution of each. Important factors mentioned are

1. Psychiatric illness and morbidity associated
2. Genetic and biological factors
3. Social and demographic factors
4. Family characteristics and childhood experiences
5. Personality traits and cognitive styles
6. Environmental and contextual factors.

According to the Maris's socio epidemiological view this model can help us in assessing various hypothesis relating to suicide. This model

even have potential to estimate influence of various factors over each other. And thus can help in evaluating the importance of each at population level (Maris, 2000).

An integrative model was proposed with four rows and four columns by Maris, Berman, and Maltsberg (1992). With conceptually similar risk factors are arranged in one domain, getting us with four rows The four columns of the model are for

1. Predisposing factors
2. Predictor/risk factors,
3. Protective factors,
4. Triggering factors.

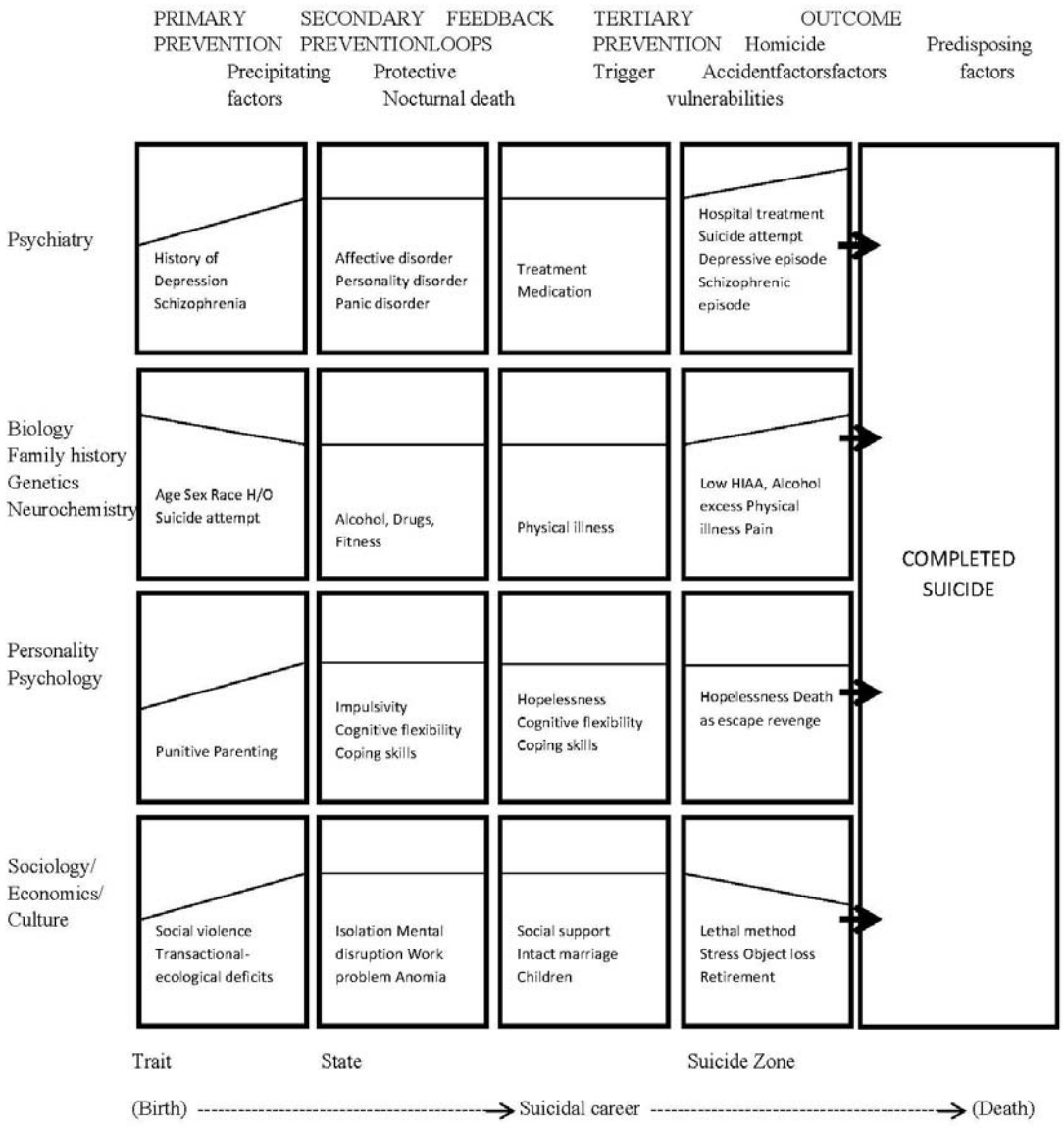
The columns in the hierarchy of event leading to suicide, predisposing factors are the vulnerability factors. Predictive factors are the on going stressors. Protective one are those preventing individuals from break down. Under the effect of triggering event, a tussle between risk and protective factors occurs if risk factors dominate over the protective factors it will lead to suicidal outcome or SDV.

This model has been widely used as such and even with modification in several research work.

Criticism- Presenting mental illness as proximal risk factor, while studies reports mental illness as final common pathway of influence.

The latter part of this section will be focussing on suicidal behaviour in elderly and different models from literature to explain and support it.

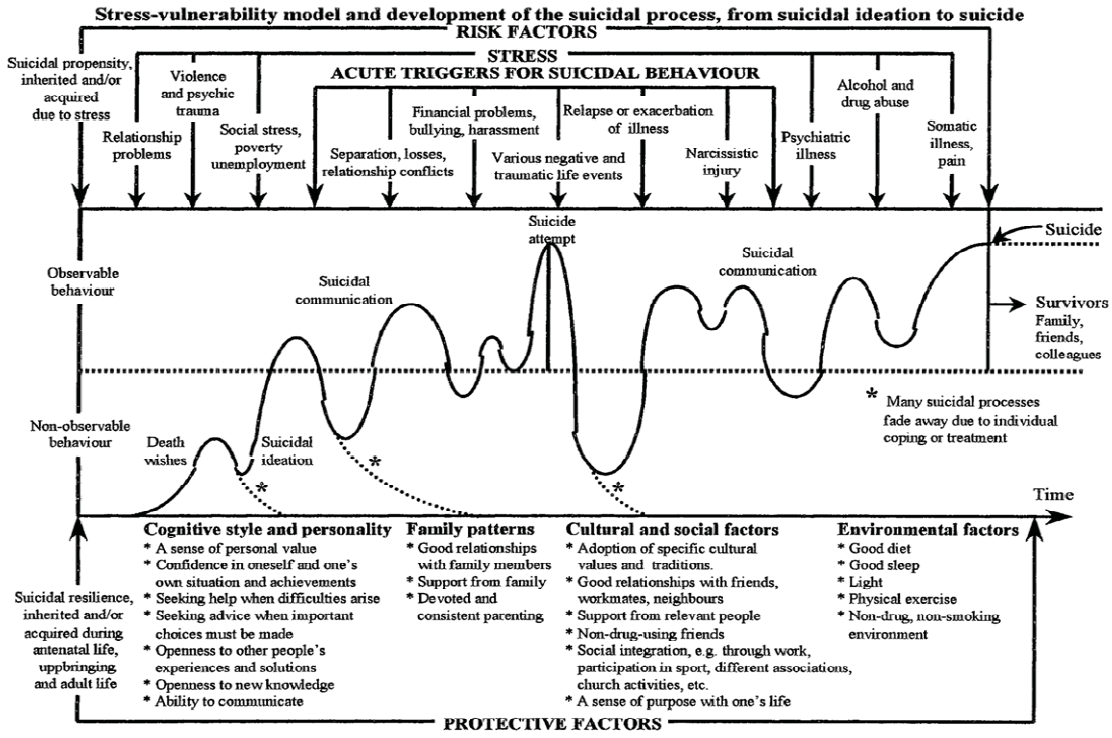
Model by Maris 2000



2. C. Rationale for studying suicidal behaviour in late life -

SUICIDAL BEHAVIOUR IN LATE LIFE

Suicidal thoughts have been shown to be relatively uncommon in late life in general populations, but common in older persons with mental disorders. One Swedish study found that only four percent of mentally Healthy 85-years olds thought that life was not worth living compared to 29% of those who were suffering from mental illness. Study (Skoog et al., 1996). The process of change in unobservable suicidal ideation and thought to become observable to others through communication or actions are explained through various model. One such model was expanded by Wasserman (Wasserman, 2001) who included risk factors and protective factors that may impact the intensity of suicidality and the outcome of the suicidal process.



Model of suicidality (Wasserman, 2001).

Later model given by **O Connell 2004,** depicting suicide as step by step process starting from **feeling of hopelessness and despair - thought of life not worth living to passive wish to die – suicide ideation → plans – attempts – suicide.**

As the model developed by Beskow and Waseerman there are no fixed stages in this model and the level of intensity may vary over days, months and even years. An interpersonal model of suicidal behaviour (Joiner Jr and Van Orden, 2008, Van Orden et al., 2010) has been applied to late life. This model suggests that suicidal desire in late life is driven by two main forces: **thwarted belongingness and perceived burdensomeness**.

The former emphasizes a basic human need to be connected to others in a positive way. The latter represents thoughts that one is more of a burden to others which also affects the need to belong. In accordance with this model, thwarted belongingness and perceived burdensomeness are together referred to as social disconnectedness. If both states are present, suicidal desire will be accentuated, but these states are in themselves not sufficient to elicit a suicidal act. According to this theory the risk for a suicidal act increases with increasing overlap of the three inner circles. The five boxes in the model represent well-documented risk factors for suicide in late life and all these factors are influenced by personality, culture, life events and neurobiological and cognitive processes.

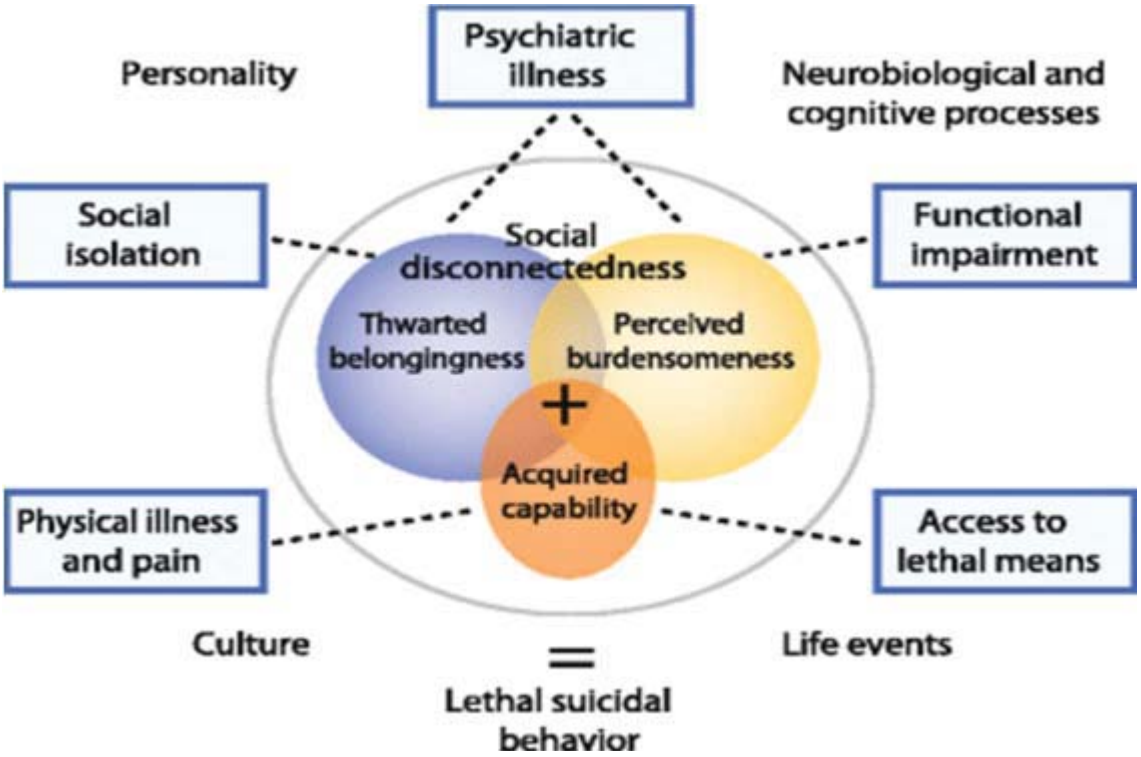
According to a study by Duberstein et al 1999, using Cumulative Illness Rating Scale and Karnofsky Physical Status Scale in patients aged 50 or above who attempted suicide both scale showed lower scores, associated with low scores on SSI. Another study by Beautrais et al 2002 provide there is no difference in suicidal ideation illness burden in community or hospital based sample. In another meta analysis rates of physical illness were found higher among elderly suicide attempters with depression than in non suicidal comparison subjects with depression (Bergman Levy et al 2011). Co-morbid physical illness, pain and

functional disability seem all to contribute as independent risk factor for suicidal behaviour in elderly (Conwell and Thompson, 2008).

Living alone, by itself was not a considerable risk factor for suicidal behaviour. But with stressful inter personal problems, poor social contact and support play an important role in elderly completed suicide and suicide attempts (Beatrais, 2002).

Perceived social support is found to be lower in persons with suicidal behaviour compared to normal (Szanto et al 1998). The interpersonal theory of suicide applied to late life

(Van Orden et al., 2010).



Recent work by Seolmin Kim et al., 2014 working on factor analysis for suicidal behaviour in elderly strongly implicates the association with depression and no much direct effect of physical illness, social relationship, economic status and psychological wellbeing.

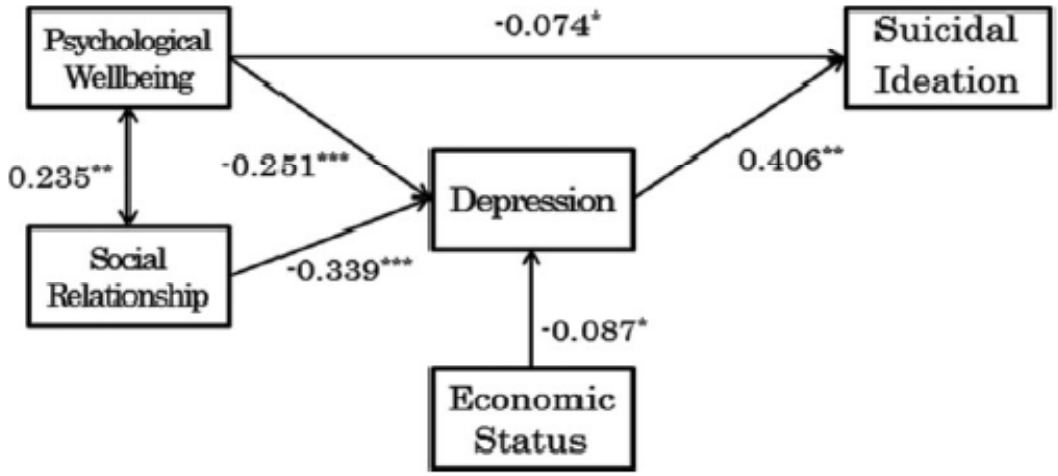


Figure 1. Path analysis of suicidal ideation.

SECTION THREE

Review of Suicide Risk Factors

At large the work done in last few decade basically concentrated their focus on assessing factors responsible for and against the suicidal behaviour from the individuals level and implicating outcome at large, population level. For the development of intervention and preventive strategies (Appleby et al., 1999; Beautrais, 1999b, 2003c; Brent et al., 1993b; Caspi et al., 1996; Conwell & Brent, 1995; Conwell et al., 1990, 1991; UN/WHO, 1996). .

As per the model given by Maris and used in the research methodology of the present study, risk factors too will be discussed in similar fashion.

3. A. Biology and family history domain

There is a strong genetic component in suicidal behaviour as per multiple clinical, adoption, and genetic studies done across the world (Brent, 1995; Maris, 2002; Runeson & Asberg, 2003; Yang & Clum, 1994). The complication in this domain is usually caused by suicide as modelling behaviour, which has strong relation for suicide especially in younger ages. Family history of suicide is another important risk factors, according to study done there is increase in risk by five times in one study

while two fold increase is observed in another studies (Gould et al. 1996 and Runeson and Asberg, 2003). .

Other important risk factors – sex-male, marital status - single separated, widow and socially isolated. Age - Increasing age especially after 55years (e. g.,). Employment status - unemployed (unemployed (IOM, 2002; Maris et al., 2000, Brent et al., 1988, 1993a, 1993b, 1994)). Individual details - previous suicidal thought or behaviour is a strong risk factor of SDV (Hawton & Fagg, 1998; Hawton et al., 1998; Runeson, 2002). Persons with non-fatal suicide attempts are vulnerable for increased mortality due to suicide related behaviour in times to come (Beautrais, 2004))

Protective factors - Strong Social support, good inter personal relationship with family members, involvement in religious activity, interaction and involvement with children (Beautrais, 2004)), are well documented protective factors (IOM, 2002).

3. B. Psychiatric diagnosis and physical illness domain.

3. B. 1. Psychiatric diagnosis

Risk factors – mental illness has major impact on SDV, in particular mood disorder (depression) in late life is a important predictors of SDV in late life contributing to 47% (Barraclough &; Beautrais,

2000c, 2001a, 2004b; Brent, 1995; Brent et al., . 1988, 1993; Cheng, 1989, 1995; Cheng et al., 2000; Conwell, 1996, 2001, De Leo et al., 2002; Rao, 1994; Rudd & Joiner, 1998; Rutz et al., 1989;Suominen et al., 1998; Tanney, 2000; Waren, Rubenowitz, & Wilhelmsson, 2003; WHO, 2003b). Loads of literature have come up and loads are yet to come targeting depression in late life. Limited role is played by other mental illness like schizophrenia, substance and substance related problems, problems with personality. Important studies done in schizophrenia and suicide, shows the rate varies from 3%-8%. The presence of problems with substances use or alcoholic abuse increases the relative risk of suicide by 8%-21%. (Harris & Barraclough, 1997; IOM, 2002; Meltzer, 1999; Runeson & Rich, 1992; Shaffer et al., 1996; Shafii et al., 1988).

Protective factors - absence of these risk factors, such as free from physical and mental illness, absence of depression or substance abuse, and early identification and treatment of psychiatric disorders imply lower suicide risk (Murphy, 2000; IOM, 2002).

3. B. 2. Physical illness

From the studies done to assess the burden of physical illness with morbidity and mortality associated, lower the illness burden associated with low or no suicidal ideation. This is more in population age 50 or more (Duberstein et al., 1999). In yet another study author didn’t find

much difference between community and hospital based sample regarding illness burden and suicidal behaviour, age 55 and above (Beautrais., 2002). Higher physical disability scores are protective as per (Hepple and Quinton, 1997) as it leads to cognitive impairment and means reduction. Regarding cancer and suicide results are ambiguous (Lawrence et al., 2000).

This area still have in sufficient literature, need to be worked for robust results.

3. C. Psychological domain.

3. C. 1. Hopelessness

Hopelessness is an important predictor of suicide especially in late life. Multiple studies have been done to assess the role of hopelessness in suicide. Few of them reports that, it plays an independent role in behaviour causation. In a case control study of depressed with or without suicidal behaviour, hopelessness found to have significant role (Dennis et al., 2005). One more, follow up study came up assessing hopelessness and suicidal behaviour in elderly, who were treated for depression have similar finding (Rifai et al., 1994).

An interesting finding is high intensity of hopelessness in depression is associated with increased risk of suicide and poor compliance to treatment (Szanto et al., 1998).

3. C. 2. Loneliness and interpersonal conflicts

Living alone, by itself was not a significantly associated with suicidal behaviour. But associated factors like higher rates of recent stressful relationship problems with lower levels of social contact and support contributed as risk factors in elderly completed suicide and suicide attempts (Beatrais, 2002).

Perceived loneliness with its impact on mental well being have significant impact on suicide in age 55 years and more (Dennis et al., 2005, Rubenowitz et al., 2001). Various factors affecting in are loss of loved ones, physical limitation and financial dependency.

Depression in elderly will increase the chance of conflicts which in turn lead to perceived loneliness compared to non – depressed controls. (Harwood et al., 2006; Harrison et al., 2010). Various studies concludes with remark on importance of evaluating and managing loneliness in patients with physical illness to have better treatment response.

3. C. 3. Thought about meaning of life

Martin Heidegger the first existential thinker according to him, there are several basic concept of existentialism. – (a). Existence and essence, (b) meaning in life and value and (c) existential frustration. Existential thinkers are especially concerned with the inner experience of an individual in his/her attempt to understand and deal with deepest human problems. Battista and Almond in 1973 define coherence of life across the field from goal directedness and purposefulness. Ryff and Singer 1998 gave ontological significance to the meaning of life from own experience.

Steger in 2006 defined meaning of life or sense of existence in the terms of - (1) sense made of (2) significance felt regarding (3) the nature of one's being and existence.

3. C. 4. Other factors involved –

Risk factors are -

- Poor impulse control,
- Irrational thinking
- Cognitive rigidity

as proven in different studies (Wasserman, 2001).

Protective factors - problem solving skill, positive coping, high self-esteem, social support around. (Beautrais, 1998; Cheng & Lee, 2000; Conner et al., 2001; Gould et al., 1996).

3. D. Sociology/economic/culture domain.

3. D. 1. Stressful life events

The events occurrence of whom need certain amount of psychological adjustment are called as - Life event (Brown & Harris, 1989). Negative life events are common before suicide (Cheng, 1989; Chen et al., 1995; Stack, 2000b). Negative life events, past suicidal attempts, major financial crisis, strong suicidal intent are associated with high risk for suicide. (Beautrais, 2000b; Rubenstenin et al., 1989; Takahashi, 1997; Weissman et al., 1987). Other significant events are past suicide attempt and suicidal thought indicated high suicide risk (Pinkahana et al., 2003; Yip et al., 2003). In contrast, easy access to clinical interventions, and restricted access to highly lethal methods of suicide might reduce suicide risk (Litman, 1996 ; Potter et al., 1995).

Death of loved ones, the highest scored life event and trauma associated is associated with both fatal and non fatal SDV (O'Connell et al., 2004b, Cattell, 2000, Erlangsen et al., 2004).

According to previous studies adequate social support in late life would decrease the SDV rate by 27% (Beautrais, 2002)

3. D. 2. Expressed emotion :

Perceived expressed emotion, mainly perceived criticism is a significant risk factor for attempted suicide but assessed in adult, lacking strong study in late life. Perceived expressed emotion becomes more significant in presence of psychiatric illness, recent life events and lack of perceived social support (Wedig and Nock, 2007).

3. D. 3. Social Support

Social isolation is defined as anything that make individual believe he /she is cared for and loved (Cobb 1976). There are literature supporting social support as a strong resiliency to suicide ideation and attempt (Stiles, 2007 ; Yung and Klum 1994) the protective effect of strong social support is not just in theory but also proven in studies.

The protective effect of social support is – increase in sense of being supported – increase sense of belongingness – decrease the suicide ideation and attempt as per joiner s Interpersonal theory of suicide (Joiner et al 2009 ; Van Orden et al 2010).

Rootlessness and perceived lack of social support is proven risk factor for SDV as per various studies across the globe (Shneidman, 1993)

Not just in prevention but strong social support also reduces the suicide intent by diffusing the crisis (Maris 2000). Other way of explaining decrease risk of suicide with good social support is better coping under stress (Stack, 1992; Trout, 1980).

From all the factors discussed in the last section three consistently strong predictor of SDV are - hopelessness, depression, and psychiatric illness (Abramson et al., 2000; Fergusson et al., 2003; Hawton et al., 1998; Maris et al., 2000; IOM, 2002).

AIMS AND OBJECTIVES

AIMS AND OBJECTIVES OF THE STUDY

1. To estimate multidimensional risk factors for suicidal self directed violence in elderly.

2. To compare the risk factors between subjects with suicidal self directed violence and that of age and sex matched controls(with no history of suicidal self-directed violence).

RESEARCH HYPOTHESIS

1. There is no difference in the family and biological variables in subjects (admitted with suicidal self directed violence) and age and sex matched controls (with no history of suicidal self directed violence).

2. There is no difference in the burden of physical and psychiatric illness variables in subjects and controls.

3. There is no difference in the various psychological variables assessed in subjects and controls.

4. There is no difference in the various sociological variables assessed in subjects and controls.

MATERIALS AND METHOD

Section A : Sample selection:

The current study was a case control study, conducted at, Rajiv Gandhi Government General Hospital, Chennai. The participants, 110 consecutive patients reported to Rajiv Gandhi Government General Hospital casualty with self directed violence during the study period. 110 age and sex matched controls were included for comparison selected from the hospital who are visiting hospital for various reasons

Inclusion criteria -

CASES : Non fatal suicidal self directed violence –

- ✓ Registered in Rajiv Gandhi Government hospital with self directed violence.
- ✓ Age group of >=55 years.
- ✓ With explicit or implicit intent to die.
- ✓ Physically stable to participate in the study.
- ✓ MMSE >18

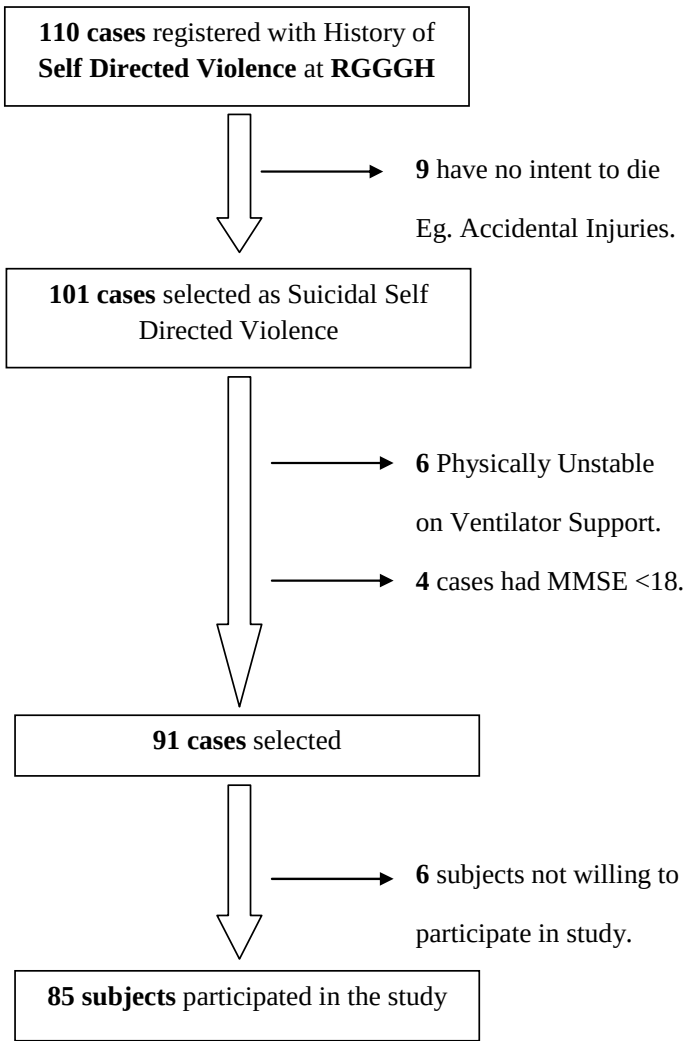
After their informed and written consent.

Exclusion criteria –

Self directed violence with no intent to die

- ✓ Physically unstable
- ✓ MMSE <18
- ✓ Not cooperative
- ✓ Not willing to participate in study

Flowchart for case selection –



Control cases.

Age and sex matched sample

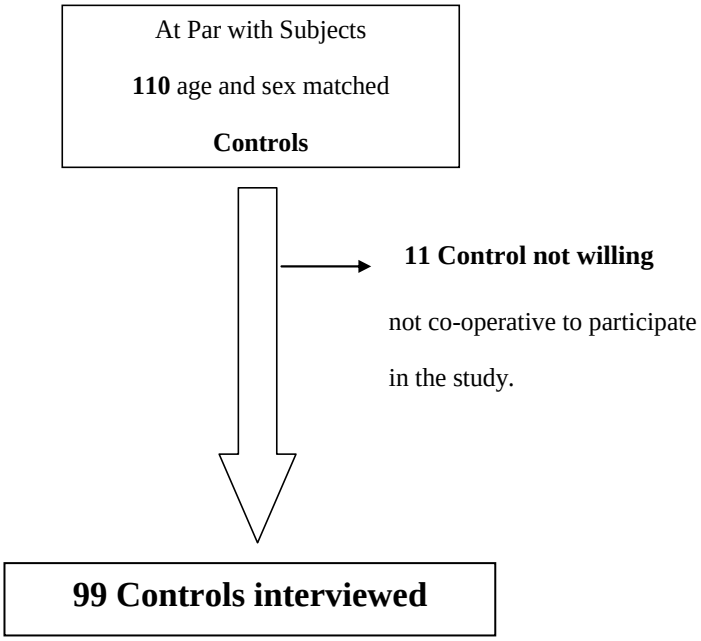
- Subjects age >=55 attending hospital for various complaints or accompanying their close one

After their informed and written consent.

Exclusion criteria – not cooperative, not willing to participate in study.

Sampling – Consecutive sampling.

The flowchart of control cases

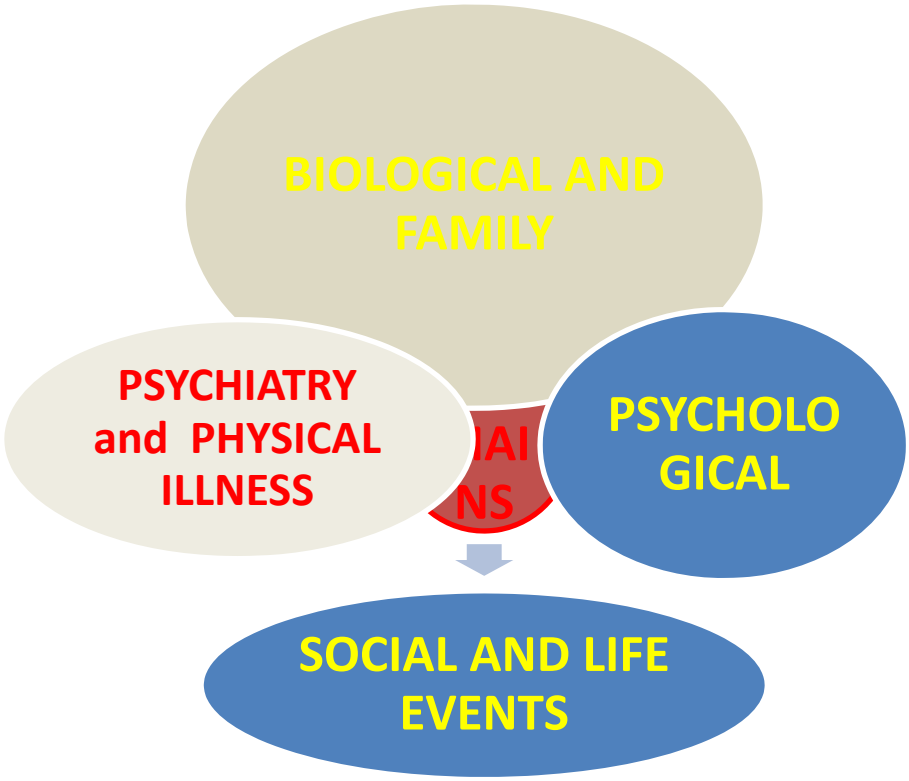


SECTION B -

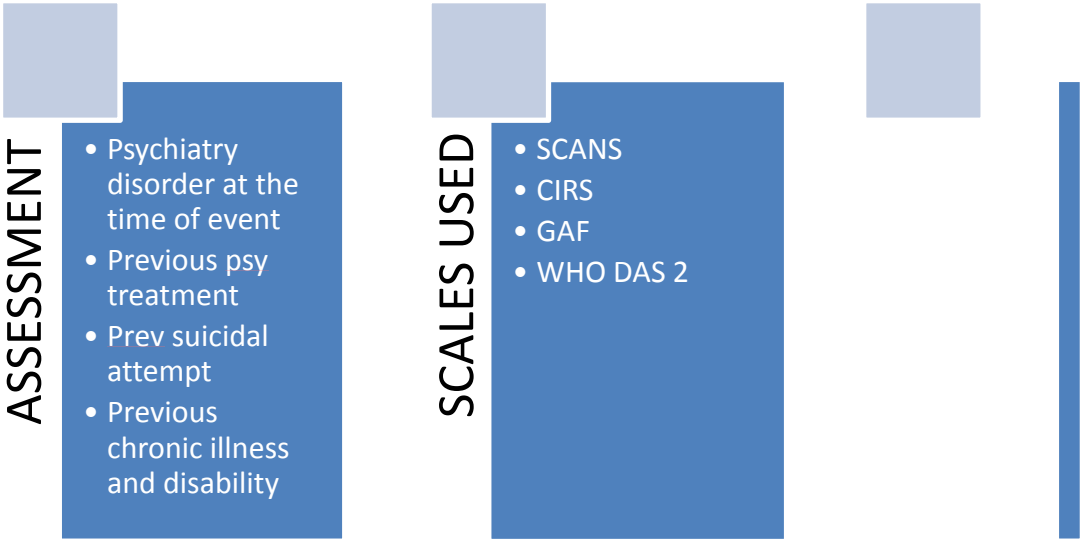
For assessment, the risk factors are classified and assessed under four category :

- ✓ Biological and family history factors
- ✓ Psychiatric and physical illness
- ✓ Psychological factors
- ✓ Social and life events variables.

(following Maris the integrated conceptual model, which was previously described in review)



1. Psychiatric Factors and physical illness:



Psychiatric and physical illness factors investigated includes -

- Psychiatry disorder at present
- Past psychiatric illness, suicide attempt if any details
- Physical illness details
- Functional limitation and disability associated with these illness.

1. A. Schedule for Clinical Assessment in Neuropsychiatry (WHO, 1999)

Schedule for clinical assessment in neuropsychiatry (SCAN) are manuals created by the World Health Organization (WHO) for assessing, measuring and classifying the mental illness. It can be used in variety of settings like the clinical and research settings. This system work on has a bottom – up approach where clusters of symptoms are not driven by

diagnosis outcome. Its stability and validity has been proven by various studies.

SCAN is a semi structured interview schedule with provision for cross examination of the subject. There is no fixed order of the flow of the interview which makes this instrument flexible and versatile. Each section of the schedules starts with the important questions about the symptoms pertaining to that section. If these questions are answered positively, then the questions below the cut-off point are also asked to the patient.

1. B. Cumulative Illness Rating Scale (CIRS)

The CIRS was developed by Lin, Lin and Gurel, in 1968 first published in JAGS. Its a user friendly scale with comprehensive coverage of medical problems by organ system Scoring - based on a 0-4, with final cumulative score.

The geriatrics version of this scale has been developed with due attention to old age problems as CIRS-G.

Scoring –comprises of – total number of categories involved, total score, ratio total score to number of categories giving severity index.

1. C. Global assessment of functioning(GAF)

GAF is a functional assessment method, developed with DSM- IV, to be used by various group of people like, clinicians, social, occupational therapist to assess individuals adaptability to daily activities.

This scale evolved from Health Sickness Rating Scale(1962) of Luborsky which was modified later by Endicorr with name of Global Assessment Scale in 1976.

With the removal of axial diagnosis system, GAF is of no use now. The current disability assessment schedule used is WHO-DAS version 2, in place of GAF.

1. D. World Health Organization Disability Assessment Schedule 2 (WHO DAS 2)

36 item interviewer version assessment schedule is used for assessing disability due to physical and psychiatric illness.

Developed by World Health Organisation classification, terminology and standard team within the frame work of the WHO /National Institute of health joint project on assessment and classification of disability.

Schedule comprises of face sheet, demographic and other background information.

This assessment schedule assesses disability in following domains COGNITIVE (5question), MOBILITY (5 questions), SELF CARE (4 question), GETTING ALONG WITH PEOPLE (5 question), LIFE ACTIVITIES (4 questions) and participation in society (8 question).

Scoring – On the basis of how these activities are affected in past 30 days assessing on lickert scale from 1 to 5. From no limitation to extreme limitation.

2. Biological and Familial Characteristics

Details will be collected using CDC Atlanta self directed violence surveillance manual (REF).

Data will be collected under following headings

- ✓ Socio - demographic details
- ✓ Event detail
- ✓ Individual and family history
- ✓ Associated factors

Socio-demographics variables included are - age, sex marital status, number of children, education, occupation, income, socio economic status, religion, family type.

Event details – manner of injury, place of injury, time at which incident happened, mechanism, injury severity, disposition, risk score with grade, rescue scores with grade, risk – rescue ratio.

Individual and family details – previous medical details, physical and psychiatry illness, previous suicidal thought and behaviour detail family history of medical and psychiatric illness.

Associated factors – proximal and protective factors.

All details will be collected as per manual description.

3. Psychological Conditions

- ✓ Depression
- ✓ Hopelessness
- ✓ Impulsivity rating scale
- ✓ Coping scale
- ✓ Loneliness scale
- ✓ Thought about life

3. A. Geriatrics Depression Scale (GDS)

GDS short form is developed by Sheikh and Yesavage in1986 is used for assessing depression.

This scale comprises of 15 questions with yes /no responses, specifically designed for elderly population covering their problems, about their feelings they experienced in the last seven days.

The GDS can be scored subjectively or objectively.

Depression can be graded as minimal, mild, moderate and severe according to score obtained.

3. B. HOPELESSNESS – Becks Hopelessness Scale (BHS)-

BHS is developed by Aron T. Beck in the year 1974, to measure hopelessness. The hopelessness in this scale used is assessed in three different aspects – (1). lack of motivation, (2). expectations and (3). feeling.

It comprises of 20 – item self –assessing questionnaire.

This test can be used for 17 to 80 years of age

This test gives the quantitative as well as qualitative assessment of one’s attitude towards future, negative view about life.

The internal reliability coefficients are reasonably high, with modest test – retest reliability coefficient are modest.

3. C. Impulsivity rating scale (IRS).

Lecrubier et al in 1995 gave fist specific scale to assess impulsivity with due importance to heterogenous nature of it. This scale comprises of seven different items for assessment like, irritability, time needed for decision making, capacity to continue with an activity, aggression, patience- impatience, capacity for delay and control of response. The items are scored according to individuals experience in the last one week.

Scoring done on lickert scale from 0(normal) to(3 severe impulsivity) with -1 (hyper control) no impulsive behaviour at all.

This can give qualitative as well quantitative assessment of impulsivity.

IRS reported to have had good construct validity (*r*=. 79), good concurrent validity, good inter-rater reliability (*kappa*=0 and sensitivity to change.

For the present study as per the literature cut off score for impulsivity set at 8.

3. D. COPE inventory:

Developed by Carver et al 1989.

Derived from Lazarus and Folkman model of coping and Carver and Scheine model of self regulation.

Comprises of 14 scales with 28 items, time taken 10-15 min.

Scoring done on the basis of responses told, the maximum positive response group is documented as the coping style of the subjects. Different coping styles assessed are problem solving approach, positive attitude, avoidance coping and emotional discharge.

Positive attitude, negative attitude.

3. E. Loneliness scale

UCLA Loneliness scale commonly used measure subjective feeling of loneliness or social isolation developed by University of California, Los Angeles. First published by Russell et al.

Currently used version 3 of UCLA scale (1996) comprises of 10 question with responses ranging from never, sometimes, often and very often.

Scoring -20 average, 25 and above reflects high level and 30 and above very high level of loneliness.

3. F. THE MEANING OF LIFE QUESTIONNAIRE

Assessed using Steger's Meaning in life (2006) questionnaire, The nature of one s being and existence. Mostly inspired by work of Frankls (1963) stating noogenic neurosis resulting in suicide and hopelessness.

Scale comprises of ten questions describing thought people sometimes have about their life (existence). Individuals have to response how often they get these thought on lickert scale.

Scoring – done again on the basis of which group the responses are more, be it searching for the meaning of life or presence of meaning of life.

4. SOCIOLOGY AND LIFE EVENTS VARIABLES

- ✓ Level of expressed emotion
- ✓ Perceived stressful life event
- ✓ Social support

4. A. Level of Expressed Emotions (LEE)

LEE scale is used to assess this sub domain. Original version comprises of 60 items, in this study 16 item modified scale covering level of intrusiveness, emotional response, attitude towards subjects and tolerance / expectation on subject by family member is used.

This modified LEE has excellent internal consistency with a *KR-20* coefficient for the overall scale of 0. 95 (Cole & Kazarian, 1988, 1993).

4. B. Life events

Life events –for the present study assessed using

Presumptive Life Event Scale by Gurmeet Singh 1984 derived from Holms and Rahe life event scale.

Comprises of 51 items covering all the important Importance number of significant negative events (from domains of relationship, family, work place, physical health and legal issues occurring in last one year.

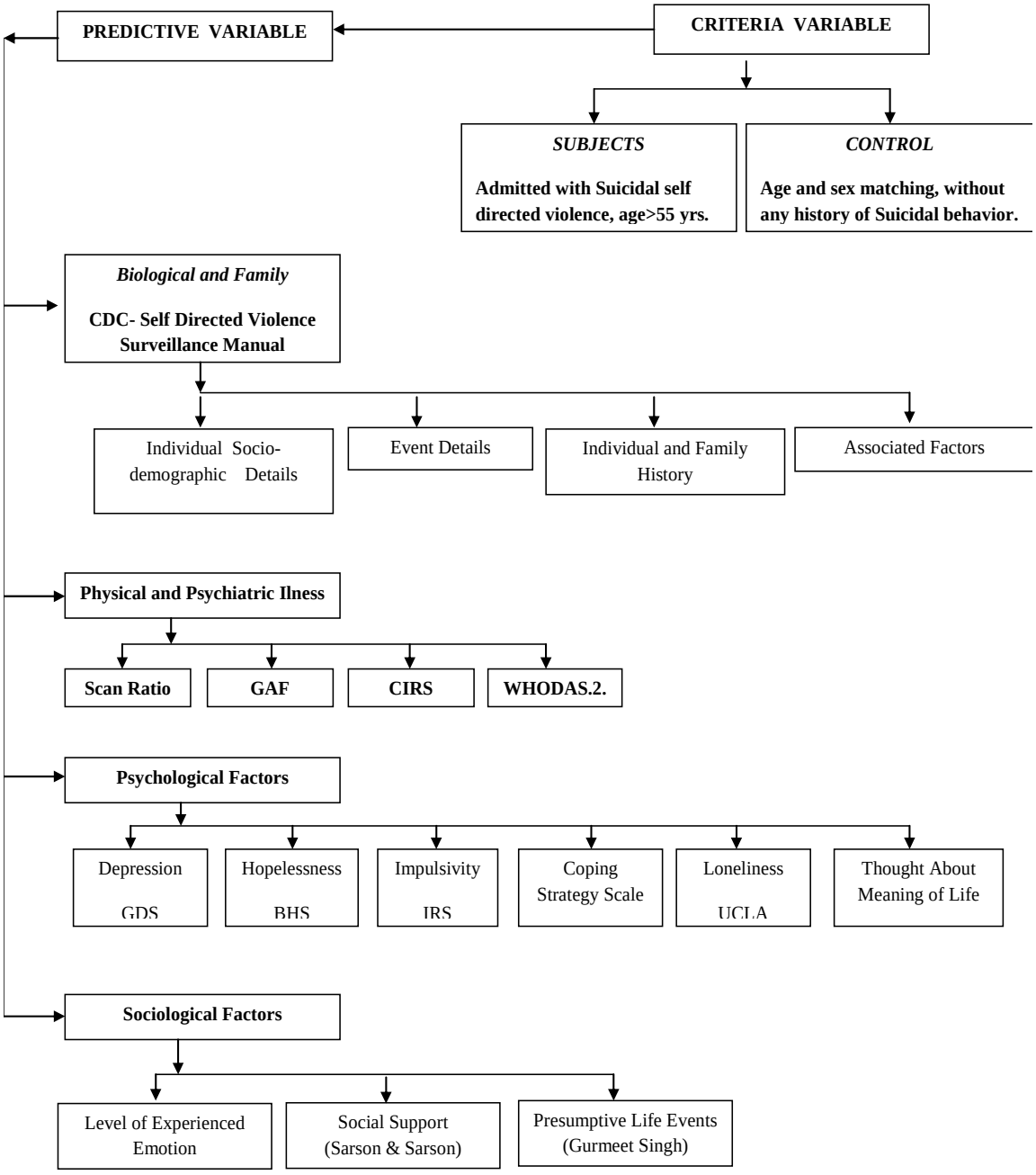
Scoring – for the present study we are calculating both total number of life events as well as mean scores of life events in both the groups.

4. C. Social Support Questionnaire

Developed by Sarson and Sarson in 1983, to assess perceived social support in individuals. This scale comprises of 6 items in two part each the first part evaluates the number of available others the individual feels he/she can turn on in the times of need in each variety of situation and gives number or perceived

availability score. The second part measures the individuals degree of satisfaction with the perceived support available in that particular situation.

RESEARCH DESIGN



Examination of scores and treatment of data :

- ✓ After completion of data collection, the responses were scrutinized and scored and finally analyzed.
- ✓ Scoring of all the scales used, were done as per the instruction of the author.
- ✓ Following which the statistical treatment of the scores were done using SPSS version 20.
- ✓ Probability values to be accepted for the test of significance, which are equal to or less than that of 0. 05.

The statistical tools used are –

- ✓ To calculate the measurement of central tendency mean, standard deviation is used.
- ✓ For comparison analysis independent t-test is used for parametric variables and chi-square test is used for non-parametric data.
- ✓ Further to estimate association univariate analysis is used to calculate odd's ratio. This is followed by using multivariate analysis to establish the correlation between the variables.

RESULTS

The results of the present study is presented under following headings –

1. Descriptive analysis of cases –registered with non-fatal suicidal self directed violence.

2. Comparative analysis between males and females from the cases registered in the study to find out any difference between the suicidal behaviour because of difference in gender.

3. Comparison between cases registered with suicidal self directed violence and age and sex matched controls, on the basis of four domains discussed in methodology-

    3.a. Socio-demographic domain

    3.b.Physical and psychiatric domain

    3.c. Psychological Factors domain

    3.d. Sociological Factor domain

4. Univariate logistic regression analysis for the factors having significant difference.

5. Multivariate logistic regression analysis for all the variable

1. Descriptive analysis of cases – registered with non-fatal suicidal self directed violence.

1. A. Socio-demographic details – (Table 1)

Variables	Male	Female
Number	**53(62%)**	32(38%)
Age (mean)	62.7years	61.8years
Marital status		
✓ Living with spouse	20(37%)	12(38%)
✓ Separated /single /divorce widow/widower	**33(63%)**	**20(62%)**
Religion		
✓ Hindu	**46(87%)**	**27(84%)**
✓ Muslim	1(2%)	3(9%)
✓ Christian	6(11%)	2(7%)
Family type		
✓ Joint	6(11%)	3(10%)
✓ Single	47(89%)	29(90%)
Address		
✓ Urban	20(38%)	12(37%)
✓ Semi urban	20(38%)	13(41%)
✓ Rural	13(24%)	7(22%)
Education		
✓ Illiterate	16(30%)	15(47%)
✓ Primary	19(36%)	10(31%)
✓ Middle	9(16%)	3(9%)
✓ SSLC	3(6%)	1(3%)
✓ PLUS 2	4(8%)	2(6%)
✓ Graduate	2(4%)	1(3%)
Occupation		
✓ Skilled	4(8%)	1(3%)
✓ Semiskilled	6(11%)	2(6%)
✓ Un skilled	15(28%)	9(28%)
✓ Unemployed	28(53%)	20(63%)

Income ✓ 18000-36016 ✓ 13495-17999 ✓ 8989-13494 ✓ 1803-5386	 1(2%) 9(17%) 35(66%) 8(15%)	 1(3%) 3(9%) 18(56%) 10(21%)
Socio economic status ✓ Upper middle ✓ Lower middle ✓ Upper lower ✓ Lower	 2(4%) 12(23%) **35(66%)** 4(8%)	 2(6%) 7(22%) **21(66%)** 2(6%)

Table Results:

From the table we found males are more in number (62%), most of the subjects with suicidal SDV are found to be single by marital status, because of various reasons (63% in males and 62% in females), religion, family type and other socio economic variables are found similar to our societal distribution.

1. B Event related details – (**Table-2)**

Variables	Male	Female
Place ✓ Home ✓ Outside home	 **40(76%)** 13(24%)	 **26(81%)** 6(19%)
Mode ✓ Poison ✓ Hanging ✓ Cut injury ✓ Drowning ✓ Burn injury	 **42(79%)** 6(11%) 2(4%) 2(4%) 1(2%)	 **26(81%)** 4(13%) 0(0) 1(3%) 1(3%)
Alcohol use with event ✓ Present ✓ Absent	 **23(43%)** 30(57%)	 1(3%) 31(97%)
Treatment /disposition ✓ *Outpatient* ✓ *Outpatient – inpatient* ✓ *Inpatient* ✓ *Intensive surgical care*	 0(0) 11(21%) **40(76%)** 2(4%)	 5(16%) 4(13%) 22(68%) 1(3%)

	Males	Females
Risk score(mean)	12.4	10.9
Risk grade ✓ High ✓ Moderate high ✓ Moderate ✓ Low moderate	 **30(57%)** **14**(26%) 9(17%) 0(0)	 4(13%) 10(31%) **16(50%)** 2(6%)
Rescue score (mean)	8.7	9.3
Rescue grade ✓ Low ✓ Moderate ✓ High moderate	 **44(83%)** 9(17%) 0(0)	 12(38%) **19(59%)** 1(3%)
Risk –Rescue ratio score	58.4	53.6
Risk – rescue grade High Moderate Low	 25(47%) **28(53%)** 00(0)	 08(25%) **23(72%)** 01(3%)

Table Results :

With regards to event related factors –

- Most common method used is poisoning, by 80% of subjects. On further sub classifying 36% of them are having drug overdose, remaining have taken insecticide, pesticides, ala, acids etc
- 43% of males have found to have alcohol use at the time of event.
- Above 90% are taken for in-patient care.
- 57%of males belong to high risk group while in females just 13%.
- 83% males belong to low rescue group while 38% in females.

- More than 50% in both the group belong to moderate risk-rescue group (53%males and 72% females).

1. C Individual and family details –(Table-3)

	Males	Females
Previous medical illness ✓ Present ✓ Absent	 19(36%) **34(64%)**	 10(31%) **22(69%)**
Previous mental illness ✓ Present ✓ Absent	 **35(66%)** 18(44%)	 15(47%) 17(53%)
Previous suicidal behaviour ✓ Present ✓ Absent	 12(23%) **41(77%)**	 9(28%) 23(72%)
Previous suicidal thought ✓ <24 hours ✓ 24 hr-7days ✓ 7-14 days ✓ 14days -30days ✓ 30-180 days	 14(26%) 19(36%) 15(28%) 5(9%) 0(0)	 **16(50%)** 10(31%) 3(9%) 2(6%) 1(3%)
Family history of medical /mental illness ✓ Present ✓ Absent	 12(23%) 41(77%)	 **15(47%)** 17(53%)

Table Results:

In individual and family factor –

- Previous medical illness is not found in majority.
- Previous mental illness is present in 66% males and 47% females.
- Previous suicidal behaviour is present in less than 30% of subjects.

- Previous suicidal thought – Most of the females develop in last 24 hours of event, while in males 64% have suicidal thought in last 14 days.
- Family history mental illness / suicide present in 47% of females.

1.D. Associated factors- (Table-4)

	Males	**Females**
Proximal factors ✓ Relationship problems ✓ Financial problems ✓ Physical illness ✓ Others	 **29(55%)** 9(17%) 9(17%) 6(11%)	 **17(53%)** 9(28%) 2(6%) 4(13%)
Protective factors ✓ Individual factors ✓ Community factors ✓ Both	 43(81%) 45(85%) 23(43%)	 21(66%) 19(59%) 17(53%)

Table Results:

Associated factors-

- Relationship problem is most common triggering event in more than 50% of subjects.
- Protective factors are divided in three sub types and are present in both the genders.

2.Comparative analysis between males and females to find out any difference between the suicidal behaviour because of difference in gender

Independent samples T-Test to compare mean age between genders. (Table -5)

	Sex	N	Mean	Std. Deviation	t-Value	P-Value
Age	Male	53	62.74	7.611	0.581	0.583
	Female	32	61.81	6.140		

Table Results:

There is no significant difference between genders on the basis of age p=0.583.

(Table-6) Chi-Square test to compare proportions between gender

Variables		Sex						P-Value
		Male		Female		Total		
		N	%	N	%	N	%	
Marital Status	Single	5	9.4	2	6.3	7	8.2	0.942
	Married	27	50.9	16	50.0	43	50.6	
	Separated	19	35.8	13	40.6	32	37.6	
	Divorced	2	3.8	1	3.1	3	3.5	
	Total	53	100.0	32	100.0	85	100.0	
Religion	Hindu	46	86.8	27	84.4	73	85.9	0.230
	Muslim	1	1.9	3	9.4	4	4.7	
	Christian	6	11.3	2	6.3	8	9.4	
	Others	0	.0	0	.0	0	.0	
	Total	53	100.0	32	100.0	85	100.0	

Number Of Children	0	15	28.3	12	37.5	27	31.8	**0.045**
	1	6	11.3	4	12.5	10	11.8	
	2	13	24.5	6	18.8	19	22.4	
	3	7	13.2	10	31.3	17	20.0	
	4	11	20.8	0	.0	11	12.9	
	6	1	1.9	0	.0	1	1.2	
	Total	53	100.0	32	100.0	85	100.0	
Address	Urban	20	37.7	12	37.5	32	37.6	0.950
	Semi urban	20	37.7	13	40.6	33	38.8	
	Rural	13	24.5	7	21.9	20	23.5	
	Total	53	100.0	32	100.0	85	100.0	
Education	Illiterate	16	30.2	15	46.9	31	36.5	0.729
	Primary	19	35.8	10	31.3	29	34.1	
	Middle	9	17.0	3	9.4	12	14.1	
	SSLC	3	5.7	1	3.1	4	4.7	
	Plus 2	4	7.5	2	6.3	6	7.1	
	Graduate	2	3.8	1	3.1	3	3.5	
	Total	53	100.0	32	100.0	85	100.0	
Occupation	Unemployed	28	52.8	20	62.5	48	56.5	0.673
	Unskilled	15	28.3	9	28.1	24	28.2	
	Semiskilled	6	11.3	2	6.3	8	9.4	
	Skilled	4	7.5	1	3.1	5	5.9	
	Total	53	100.0	32	100.0	85	100.0	

Income	1803-5386	8	15.1	10	31.3	18	21.2	0.294
	5387-8988	0	.0	0	.0	0	.0	
	8989-13494	35	66.0	18	56.3	53	62.4	
	13495-17999	9	17.0	3	9.4	12	14.1	
	18000-36016	1	1.9	1	3.1	2	2.4	
	Total	53	100.0	32	100.0	85	100.0	
Socioeconomic Status	Lower	4	7.5	2	6.3	6	7.1	0.708
	Upper lower	35	66.0	21	65.6	56	65.9	
	Lower middle	12	22.6	7	21.9	19	22.4	
	Upper middle	2	3.8	2	6.3	4	4.7	
	Total	53	100.0	32	100.0	85	100.0	
Family Type	Single/Nuclear	47	88.7	29	90.6	76	89.4	0.778
	Joint	6	11.3	3	9.4	9	10.6	
	Total	53	100.0	32	100.0	85	100.0	

Table Results:

- Males and females have no significant difference in socio demographic variable except number of children.

Independent samples T-Test to compare mean value between genders (Table -7).

	Sex	N	Mean	Std. Deviation	t-Value	P-Value
Time Of Event 24hrs Time	Male	53	10.47	6.188	3.666	**<0.001**
	Female	32	15.47	5.919		
Risk Score	Male	53	12.40	1.498	4.218	**<0.001**
	Female	32	10.97	1.534		
Rescue Score	Male	53	8.72	.863	2.562	**0.014**
	Female	32	9.38	1.289		
Risk Rescue Ratio	Male	53	58.40	4.538	4.080	**<0.001**
	Female	32	53.69	6.051		

Table Results:

- There is significant difference between males and females with time of event, females mostly have suicidal act in second half of the day compared to males with p=0.001.
- Independent T-test shows significant difference between genders on the RISK SCORE , RESCUE SCORE and RISK-RESCUE RATIO scores ($p<0.05$)

Tables- Chi-Square test to compare proportions between genders (Table -8)

Variables		Sex						P-Value
		Male		Female		Total		
		N	%	N	%	N	%	
Place Of Event	Home	40	75.5	26	81.3	66	77.6	0.940
	Work place	2	3.8	1	3.1	3	3.5	
	Road	9	17.0	4	12.5	13	15.3	
	Not known	2	3.8	1	3.1	3	3.5	
	Total	53	100.0	32	100.0	85	100.0	
Mechanism	Cut injury	2	3.8	0	.0	2	2.4	0.722
	Burn	1	1.9	1	3.1	2	2.4	
	Drowning	2	3.8	1	3.1	3	3.5	
	Poison	42	79.2	26	81.3	68	80.0	
	Hanging	6	11.3	4	12.5	10	11.8	
	Total	53	100.0	32	100.0	85	100.0	
Alcohol Use At Time Of Event	No	30	56.6	29	90.6	59	69.4	**0.001**
	Yes	23	43.4	3	9.4	26	30.6	
	Total	53	100.0	32	100.0	85	100.0	
Disposition/Given Treatment	10	0	.0	5	15.6	5	5.9	**0.027**
	12	11	20.8	4	12.5	15	17.6	
	13	40	75.5	22	68.8	62	72.9	
	14	2	3.8	1	3.1	3	3.5	
	Total	53	100.0	32	100.0	85	100.0	

Risk Grade	Low moderate	0	.0	2	6.3	2	2.4	**<0.001**
	Moderate	9	17.0	16	50.0	25	29.4	
	High moderate	14	26.4	10	31.3	24	28.2	
	High	30	56.6	4	12.5	34	40.0	
	Total	53	100.0	32	100.0	85	100.0	
Rescue Grade	Low	44	83.0	12	37.5	56	65.9	**<0.001**
	Moderate	9	17.0	19	59.4	28	32.9	
	High moderate	0	.0	1	3.1	1	1.2	
	Total	53	100.0	32	100.0	85	100.0	
Risk Rescue Grade	low	0	.0	1	3.1	1	1.2	0.054
	Moderate	28	52.8	23	71.9	51	60.0	
	High	25	47.2	8	25.0	33	38.8	
	Total	53	100.0	32	100.0	85	100.0	

Table Results:

- Use of alcohol in males and females differs significantly.
- Most of the males requires high need care (96% inpatient care)
- As mentioned before there is significant difference in risk grade and rescue grade in males and females.
- There is no significant difference in males and females with risk-rescue ratio grade p=0.54.

Tables- Chi-Square test to compare proportions between genders (Table -9)

Factors		Sex						P-Value
		Male		Female		Total		
		N	%	N	%	N	%	
Somatic Illness	No	34	64.2	22	68.8	56	65.9	0.665
	Yes	19	35.8	10	31.3	29	34.1	
	Total	53	100.0	32	100.0	85	100.0	
Mental Illness	No	18	34.0	17	53.1	35	41.2	0.082
	Yes	35	66.0	15	46.9	50	58.8	
	Total	53	100.0	32	100.0	85	100.0	
Previous Suicidal Behaviour	No	41	77.4	23	71.9	64	75.3	0.671
	Present	8	15.1	8	25.0	16	18.8	
	2	2	3.8	1	3.1	3	3.5	
	3	1	1.9	0	.0	1	1.2	
	4	1	1.9	0	.0	1	1.2	
	Total	53	100.0	32	100.0	85	100.0	
Family History	No	44	83.0	23	71.9	67	78.8	0.223
	Present	9	17.0	9	28.1	18	21.2	
	Total	53	100.0	32	100.0	85	100.0	
Proximal Factor	0	1	1.9	0	.0	1	1.2	0.657
	1	9	17.0	2	6.3	11	12.9	
	2	18	34.0	12	37.5	30	35.3	
	3	11	20.8	5	15.6	16	18.8	
	4	6	11.3	6	18.8	12	14.1	
	6	3	5.7	3	9.4	6	7.1	
	13	1	1.9	0	.0	1	1.2	
	16	4	7.5	4	12.5	8	9.4	
	Total	53	100.0	32	100.0	85	100.0	
No Of Protective Factors	1	10	18.9	5	15.6	15	17.6	0.700
	2	25	47.2	12	37.5	37	43.5	
	3	17	32.1	14	43.8	31	36.5	
	4	1	1.9	1	3.1	2	2.4	
	Total	53	100.0	32	100.0	85	100.0	

Table Results:

Comparing non parametric variables between the group found to have no significant difference.

Independent samples T-Test to compare mean values between genders

(Table -10).

Variables	Sex	N	Mean	Std. Devi	t-Value	P-Value
Cumulative illness rating scale	Male	52	7.06	3.702	0.776	0.440
	Female	32	7.72	3.929		
Global assessment of functioning	Male	53	6.32	1.504	0.892	0.375
	Female	32	6.59	1.103		
Who das 2 (36 version)	Male	53	10.19	1.962	0.705	0.483
	Female	32	9.88	2.028		
Geriatric depression scale (gds) score	Male	53	5.87	3.369	0.710	0.480
	Female	32	6.38	2.871		
Hopelessness score	Male	53	5.72	4.045	1.254	0.213
	Female	32	9.13	19.161		
Loneliness score	Male	52	21.54	6.440	1.288	0.201
	Female	32	23.44	6.753		
Impulsivity scores	Male	53	9.28	5.201	1.558	0.123
	Female	32	11.13	5.411		
Social support score	Male	53	2.79	1.230	1.342	0.183
	Female	32	3.19	1.447		
Life events	Male	53	4.12	0.493	3.01	0.076
	Female	32	3.98	0.477		

Table Results:

There is no any significant difference between genders on comparing with other variables.

3. Comparison between cases and controls

3. (a)Socio demographic profile

Independent samples T-Test to compare mean age between cases and controls (Table -11).

	Group	N	Mean	Std. Deviation	t-Value	P-Value
Age	Control	99	62.78	6.864	0.379	0.705
	Case	85	62.39	7.070		

Table Results:

There is no significant difference between mean age in both cases and controls with p=0.705.

Chi-Square test to compare proportions between cases and controls (Table -12)

Variables		Group						P-Value
		Control		Case		Total		
		N	%	N	%	N	%	
Gender	Male	58	58.6	53	62.4	111	60.3	0.603
	Female	41	41.4	32	37.6	73	39.7	
	Total	99	100.0	85	100.0	184	100.0	
Marital Status	Single	7	7.1	7	8.2	14	7.6	0.770
	Married	49	49.5	43	50.6	92	50.0	
	Separated	40	40.4	32	37.6	72	39.1	
	Divorced	3	3.0	3	3.5	6	3.3	
	Total	99	100.0	85	100.0	184	100.0	

Religion	Hindu	86	86.9	73	85.9	159	86.4	0.972
	Muslim	4	4.0	4	4.7	8	4.3	
	Christian	9	9.1	8	9.4	17	9.2	
	Total	99	100.0	85	100.0	184	100.0	
Number Of Children	0	31	31.3	27	31.8	58	31.5	0.995
	1	12	12.1	10	11.8	22	12.0	
	2	24	24.2	19	22.4	43	23.4	
	3	20	20.2	17	20.0	37	20.1	
	4	11	11.1	11	12.9	22	12.0	
	6	1	1.0	1	1.2	2	1.1	
	Total	99	100.0	85	100.0	184	100.0	
Address	Urban	36	36.4	32	37.6	68	37.0	0.976
	Semi urban	40	40.4	33	38.8	73	39.7	
	Rural	23	23.2	20	23.5	43	23.4	
	Total	99	100.0	85	100.0	184	100.0	
Education	Illiterate	37	37.4	31	36.5	68	37.0	0.976
	Primary	33	33.3	29	34.1	62	33.7	
	Middle	13	13.1	12	14.1	25	13.6	
	SSLC	5	5.1	4	4.7	9	4.9	
	Plus 2	7	7.1	6	7.1	13	7.1	
	Graduate	4	4.0	3	3.5	7	3.8	
	Total	99	100.0	85	100.0	184	100.0	
Occupation	Unemployed	55	55.6	48	56.5	103	56.0	0.942
	Unskilled	29	29.3	24	28.2	53	28.8	
	Semiskilled	9	9.1	8	9.4	17	9.2	
	Skilled	6	6.1	5	5.9	11	6.0	
	Total	99	100.0	85	100.0	184	100.0	

Income	1803-5386	20	20.2	18	21.2	38	20.7	0.211
	5387-8988	0	.0	0	.0	0	.0	
	8989-13494	50	50.5	53	62.4	103	56.0	
	13495-17999	26	26.3	12	14.1	38	20.7	
	18000-36016	3	3.0	2	2.4	5	2.7	
	Total	99	100.0	85	100.0	184	100.0	
Socioeconomic Status	Lower	5	5.1	6	7.1	11	6.0	0.497
	Upper lower	64	64.6	56	65.9	120	65.2	
	Lower middle	24	24.2	19	22.4	43	23.4	
	Upper middle	6	6.1	4	4.7	10	5.4	
	Total	99	100.0	85	100.0	184	100.0	
Family Type	Single/Nuclear	89	89.9	76	89.4	165	89.7	0.914
	Joint	10	10.1	9	10.6	19	10.3	
	Total	99	100.0	85	100.0	184	100.0	
Previous Suicidal Behaviour	No	82	82.8	64	75.3	146	79.3	0.201
	Present	17	17.2	21	24.7	38	20.7	
	Total	99	100.0	85	100.0	184	100.0	
Family History	No	82	82.8	67	78.8	149	81.0	0.490
	Present	17	17.2	18	21.2	35	19.0	
	Total	99	100.0	85	100.0	184	100.0	

Table Results:

There is no significant difference between cases and controls in social demographic variables.

3. B. Physical and Psychiatric illness

Tables- Chi-Square test to compare proportions between cases and controls (Table -13).

		Group						P-Value
		Control		Case		Total		
		N	%	N	%	N	%	
Somatic Illness	No	65	65.7	56	65.9	121	65.8	0.974
	Yes	34	34.3	29	34.1	63	34.2	
	Total	99	100.0	85	100.0	184	100.0	
Mental Illness	No	60	60.6	35	41.2	95	51.6	**0.009**
	Yes	39	39.4	50	58.8	89	48.4	
	Total	99	100.0	85	100.0	184	100.0	

Table Result :

There is significant difference between cases and controls with presence of mental illness p=0.009.

Independent samples T-Test to compare mean age between cases and controls (Table -14).

	Group	N	Mean	Std. Deviation	t-Value	P-Value
Cumulative Illness Rating Scale	Control	99	5.73	2.531	3.265	**0.001**
	Case	84	7.31	3.780		
Global Assessment Of Functioning	Control	99	7.78	1.139	7.333	**<0.001**
	Case	85	6.42	1.366		
Who DAS 2 (36 Version)	Control	99	6.36	2.292	11.768	**<0.001**
	Case	85	10.07	1.981		

Table Results

There is significant difference between cases and controls in cumulative illness rating scores, gaf scores and WHO DAS2 scores.

3.c. Psychological Factors –(Table-15,16,17,18,19 and 20)

GDS severity	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
No	61	61.6	35	41.2	96	52.2	**0.001**
Mild	27	27.3	21	24.7	48	26.1	
Moderate	11	11.1	26	30.6	37	20.1	
Severe	0	.0	3	3.5	3	1.6	
Total	99	100.0	85	100.0	184	100.0	

Hopelessness	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
Normal	61	61.6	46	54.1	107	58.2	**0.052**
Mild	29	29.3	20	23.5	49	26.6	
Moderate	9	9.1	16	18.8	25	13.6	
Severe	0	.0	3	3.5	3	1.6	
Total	99	100.0	85	100.0	184	100.0	

Loneliness	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
Never	44	44.4	27	31.8	71	38.6	0.216
Rarely	23	23.2	24	28.2	47	25.5	
Sometime	28	28.3	26	30.6	54	29.3	
Often	4	4.0	8	9.4	12	6.5	
Total	99	100.0	85	100.0	184	100.0	

Table Results:

- There is significant difference between both the group in Geriatric Depression Severity with p=0.001.
- There is difference between both the groups in Hopelessness severity p=0.052
- There is no significant difference both the groups in loneliness grades p=0.215.

Impulsivity grade	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
Normal	65	65.7	39	45.9	104	56.5	**0.007**
Impulsive	34	34.3	46	54.1	80	43.5	
Total	99	100.0	85	100.0	184	100.0	

Table Results:

- This table shows there is significant difference between both the group in impulsivity grade.

Coping positive or negative	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
Negative	27	27.3	25	29.4	52	28.3	0.748
Positive	72	72.7	60	70.6	132	71.7	
Total	99	100.0	85	100.0	184	100.0	

Table Results:

- Coping strategy found to be similar in both the group cases and controls with p=0.748 more than p=0.05.

Thought about meaning of life	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
Presence	60	60.6	47	55.3	107	58.2	0.466
Searching	39	39.4	38	44.7	77	41.8	
Total	99	100.0	85	100.0	184	100.0	

Table Results:

- There is no significant difference between both the groups in Thought about meaning of life variable.

3. d. Sociological Factors –(Table-21 and 22)

Life events (no)	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
0	48	48.5	40	47.1	88	47.8	0.584
1	22	22.2	18	21.2	40	21.7	
2	19	19.2	15	17.6	34	18.5	
3	5	5.1	6	7.1	11	6.0	
4	3	3.0	4	4.7	7	3.8	
5	2	2.0	2	2.4	4	2.2	
Total	99	100.0	85	100.0	184	100.0	

Level of expressed emotion	Group						P-Value
	Control		Case		Total		
	N	%	N	%	N	%	
Normal	55	55.6	30	35.3	85	46.2	0.001
Hostility	9	9.1	9	10.6	18	9.8	
Over involvement	27	27.3	21	24.7	48	26.1	
Criticism	8	8.1	25	29.4	33	17.9	
Total	99	100.0	85	100.0	184	100.0	

Table Results:

- There is no significant difference between cases and controls in number of life events.
- There is significant difference between cases and controls in level of expressed emotions especially criticism p=0.001.

Independent sample T-Test to compare means of parametric variables between cases and controls (significant p<0.05) Table -23 .

Variables	Group	N	Mean	Std. Dev	t-Value	P-Value
Cumulative illness rating scale	Case	84	7.31	3.780	3.265	**0.001**
	Control	99	5.73	2.531		
Global assessment of functioning	Case	85	6.42	1.366	7.333	**<0.001**
	Control	99	7.78	1.139		
Who das 2 (36 version)	Case	85	10.07	1.981	11.768	**<0.001**
	Control	99	6.36	2.292		
Geriatric depression scale (gds) score	Case	85	6.06	3.182	2.963	**0.004**
	Control	99	4.81	2.419		
Hopelessness score	Case	85	7.00	12.181	1.948	**0.053**
	Control	99	4.32	2.567		
Loneliness score	Case	84	22.26	6.586	1.958	**0.052**
	Control	99	20.33	6.702		
Impulsivity scores	Case	85	9.98	5.325	3.251	**0.001**
	Control	99	7.71	3.900		
Social support score	Case	85	2.94	1.322	3.981	**<0.001**
	Control	99	3.75	1.409		
Life event numbers	Cases	85	4.17	0.493	1.987	0.065
	Controls	99	3.87	0.477		
Life events mean scores	Cases	85	243.1	34.35	5.871	**<0.001**
	Controls	99	170.3	40.68		

4. Univariate LOGISTIC REGRESSION analysis –(Table-24)

(the factors with a p value < 0.200 considered for logistic regression)

Factors		Case		Odds Ratio	95% CI		P-Value
		N	Row %		Lower	Upper	
Previous suicidal behaviour	No	64	43.8	1.00	-	-	-
	Present	21	55.3	1.58	0.77	3.25	0.210
GDS severity	No	35	36.5	1.00	-	-	-
	Mild	21	43.8	1.36	0.67	2.75	0.398
	Moderate	29	72.5	4.60	2.05	10.32	**<0.001**
Hopelessness	Normal	46	43.0	1.00	-	-	-
	Mild	20	40.8	0.92	0.46	1.82	0.799
	Moderate	19	67.9	2.80	1.16	6.75	**0.022**
Impulsivity grade	Normal	39	37.5	1.00			
	Impulsive	46	57.5	2.26	1.24	4.09	**0.007**
Level of expressed emotion	Normal	30	35.3	1.00			
	Hostility	9	50.0	1.83	0.66	5.11	0.247
	Over involvement	21	43.8	1.43	0.69	2.94	0.336
	Criticism	25	75.8	5.73	2.30	14.26	**<0.001**

Table Results:

- Univariate analysis done to calculate odds ratio of significant variables - GDS severity, Hopelessness Severity, impulsivity grade, level of expressed emotion.

5. MULTIPLE LOGISTIC REGRESSION analysis

(As the variables GDS severity and Hopelessness are highly correlated we cannot do the MLR with these two factors together. Therefore MLR is done twice with either of the factors.)

5(a) Multiple Logistic Regression analysis with depression – (Table-25)

Factors		Case		Odds Ratio	95% CI		P-Value
		N	Row %		Lower	Upper	
Previous suicidal behaviour	No	64	43.8	1.00			
	Present	21	55.3	2.83	0.49	16.38	0.246
GDS severity	No	35	36.5	1.00			
	Mild	21	43.8	0.87	0.19	4.06	0.855
	Moderate	29	72.5	6.81	1.22	38.04	**0.029**
Impulsivity grade	Normal	39	37.5	1.00			
	Impulsive	46	57.5	5.92	1.43	24.57	**<0.001**
Level of expressed emotion	Normal	30	35.3	1.00			
	Hostility	9	50.0	1.17	0.18	7.68	0.868
	Over involvement	21	43.8	0.99	0.18	5.33	0.991
	Criticism	25	75.8	103.7	13.17	815.9	**<0.001**
Cumulative illness rating scale				1.10	0.90	1.10	0.346
Global assessment of functioning				0.28	0.15	0.28	**<0.001**
WHO DAS 2				2.90	1.97	2.90	**<0.001**
Social security score				0.73	0.53	0.73	**0.042**

5(b) Multiple Logistic Regression analysis with Hopelessness- (Table-26)

Factors		Case		Odds Ratio	95% CI		P-Value
		N	Row %		Lower	Upper	
Previous suicidal behaviour	No	64	43.8	1.00			
	Present	21	55.3	2.67	0.45	15.95	0.282
Hopelessness	Normal	46	43.0	1.00			
	Mild	20	40.8	0.20	0.04	1.04	**0.051**
	Moderate	19	67.9	2.84	0.35	23.36	0.332
Impulsivity grade	Normal	39	37.5	1.00			
	Impulsive	46	57.5	4.97	1.19	20.71	**0.002**
Level of expressed emotion	Normal	30	35.3	1.00			
	Hostility	9	50.0	1.08	0.17	7.09	0.934
	Over involvement	21	43.8	1.54	0.32	7.46	0.589
	Criticism	25	75.8	103.5	9.36	1144	**<0.001**
Cumulative illness rating scale				1.09	0.89	1.34	0.395
Global assessment of functioning				0.18	0.08	0.40	**<0.001**
WHO DAS 2				3.39	2.17	5.30	**<0.001**
Social security score				0.68	0.44	1.04	**0.049**

Table Results:

- The results of multivariate logistic regression analysis supports the significant differences in cases and controls in following variables-
    - ✓ Depression
    - ✓ Hopelessness
    - ✓ Impulsivity
    - ✓ Criticism
    - ✓ Social support
    - ✓ Mean scores of life events
    - ✓ Cumulative illness rating score
    - ✓ Global assessment of functioning
    - ✓ WHO DAS 2. scores

DISCUSSION

The present study aims to assess the risk factors for suicidal self directed violence in elderly and to compare these risk factors with that of age and sex matched controls. To do so the risk factors are divided into four major domains and the component of each domain assessed using standard test questionnaire.

Findings from the present study supported the objectives decided *priory* that suicide is a multi dimensional problem. It involves psychiatric, psychological, familial and sociological risk factors. In this study many findings are found to be consistent with the studies conducted in other parts of the world and a few are new to this study.

According to this study living single (being single, separated, widow / widower or divorced) is significantly associated to suicidal behaviour with p=0. 042. This finding is supported by studies done by others (de Leo et al., 2001 and Lamprecht et al., 2005). Contradictory findings too have been reported stating, being married is risk factor by Chiu et al., 1996 and Beautrais, 2002. While Takahashi et al., 1995 and Tsoh et al., 2005, found no association between marital status and suicide. This difference can be explained stating the difference in inclusion criteria and cultural variation across the countries.

Religious belief has no significant role to play in suicidal behaviour, the p value found to be 0. 972 as per the present study. This finding is consistent with the finding from other studies. Important to note difference in suicidal behaviour has been observed in studies done in two different cultures but not in the study done at same place within one cultural sphere (de Leo et al., 2001)

In our study we found no significant difference on the educational status over self directed violence. Only few studies have compared educational status and suicidal behaviour most of them found no significant association except one study by Osvath et al., 2002 (Takahashi et al., 1995, Szanto et al., 1998., Beautrais 2002)

Other socio demographical variables were also compared like that of income, occupation and socioeconomic status but no significant association observed. Similar results were observed in study by Lawrence et al., 2000. As per the meta analysis by Chan et al., 2007 only two studies (Heppel and Quinton, 1997 and Lawrence et al., 2000) have compared the mentioned socio demographic factors and the findings from both are inconsistent.

No significant association is observed with family type and suicide. The reason can be the cultural background of our country where elders are mostly staying with their sibling unlike western world. The studies

reporting contrary results are mostly from the western world (Takahashi et al., 1995, Dennis et al., 2007 and Hawton, 2011).

In this study females are found more prone to attempt suicide in the second half of the day when compared to males. But we didn't get any literature currently to support this finding. It can also be coincidental finding in this study. Chronobiology and suicide is a field that needs to be explored in future.

Most common method the subjects employed to harm themselves are poisoning (80%), followed by hanging (11%). These findings are consistent with our national representative data (NCRB 2012). De leo et al., 2001 in his study found to have prevalence of poisoning 69. 1%, Hepple and Quinton, 1997 by (89%). Interesting finding to the elderly age group per se is overdose of the prescribed medication for various other ailments, similar observations were noted by Osvath et al., 2002.

Use of alcohol found to increase the morbidity and mortality with suicidal behaviour especially for male (p value of <0. 001). Various studies supporting this finding are reported in literature. Similar observation was found in other studies like Brady, 2006. He concluded the relation of alcohol to suicidal behaviour by its depressogenic effects and through promotion of adverse life events. With respect to elderly population substance use and risk of suicide, studies by Szanto et al 1998,

and by Beautrais 2002 supported the role of alcohol. While Waren et al., 2010 reported mixed results. According to meta analysis by Chan et al., the prevalence of alcohol in the suicide cases varies from 2% to 36%. It's not just the direct effect of alcohol, but the associated vulnerability to major depressive episodes, stressful life events, poor social support and living alone that strengthens the role of alcohol in late life suicide. But again culture has its role to play in pattern of drinking across the culture.

As per the study most of the elderly taken for inpatient care with or following attempted self directed violence (92%), had fatal out come in 11 cases and 7 of 110 subjects registered for the study required ventilator support. This finding reflects the high mortality and morbidity (15. 6%) with suicide in this age group. Hepple and Quinton,1997 from U. K reports the mortality rate of 12%, while Holly et al 1998 from Canada reports the rate to be 17. 5%. Most common reasons given for this high number are – high lethality and associated co-morbid illness.

Most of the subjects especially males, scored high on risk score reflecting high intent to die (83%) and belong to high risk or moderate to high risk score group. This supports the claim that non fatal suicidal self directed violence in late life is a failed attempt. Similar association is observed in other studies by Murnill and Owens 1990, Pierce 1987. As rescue score is inversely proportional to risk score most of the male

belong to low rescue score (82%). Females mostly belong to moderate risk group with moderate rescue score, giving others chance to save them. This finding can be explained from the (a). Psychological make up of females, (b). Use of less lethal mode, (c). Impulsive attempts and (d). Absence of alcohol use.

Overall the risk – rescue ratio is also calculated in this study to get the final picture of intent and lethality and found that the mean score for both groups fall in moderate group. But as mentioned before 47% males belong to high risk group. Hence there is need of time to focus preventive measures towards elderly male, to control this mishaps.

Presence of physical or somatic illness is strongly associated with the suicidal behaviour, more so in male gender. This finding is consistent with previous studies (Bergman levy et al., 2011). Even Conwell and Thompson in their study 2009 found co-morbid physical illness, pain and functional disability contribute as an independent risk factor for self destructive behaviour in late life. Duberstein et al., 1999 assessed burden of physical illness using same scale as used in the study but found to have no much difference among cases with suicide to non attempters

The role of chronic illness like cancer and suicidal behaviour is assessed in few studies. In this study we found 5/85 cases suffering from different stages of illness getting different mode of treatment. The most

important aspect of illness (cancer) for them is the pain associated with it, rather than the illness per se.

Other important illness are stroke (7 cases), paraplegia (5 cases), arthritis (6 cases), facture long bones (4 cases), auto immune disorder (4 cases) and cancer (5 cases). It's not the physical illness alone, but most of the time the distress associated with it makes the individual suicidal. Impact of the physical illness on the life style, discomfort associated with treatment, fear of being burdensome and loss of hope to recovery all contribute to the suicide.

Presence of mental illness have significant association with (p=0. 024) suicidal behaviour in the late life suicide. The important mental illness are depression, alcohol and related problem, psychosis (5 cases), personality disorder (3 cases). Similar findings are reported by Takahashi et al., 1995, he reported a high rate of 76% prevalence of mental illness in late life suicide. Even British study by Heppel and Quinton, 1997 reports same but the rate was 55%. Lower prevalence rates were reported from Chinese study by Chiu et al., 1995. Overall the history of psychiatric illness is a major pre-disposing factor for suicide in late life.

The strong role of physical and psychiatric illness is further proven by the strong correlation between global assessment of functioning scores and WHO DAS 2, where the p values are showing significant difference (GAF p=<0. 001 and for WHO DAS 2 P=<0. 001).

In a study by Owens et al., 2002 previous suicidal behaviour increases the risk of morbidity and mortality related to current suicidal behaviour by 15%. This study reports previous suicidal behaviour in 30% of subjects, more in females (37. 5%). Different studies have given different rate of prevalence of suicide with previous suicidal behaviour (3. 6% Chiu et al., 1996, 11 % to 13% by De Leo et al., 2002b).

With the respect to previous suicidal thought, the present study found that 81 % of females had developed suicidal thought in the last 24 hours of the event. Where as in males significant number have on and off suicidal thoughts in the last one month of the event (explicit or implicit). This finding is again in favour of impulsive nature of suicide in females with moderate risk attempt, triggered by relationship problem and planned, lethal near fatal, just missed attempts in males.

There is no statistical significance with respect to family history of suicide and mental illness among cases and controls. This finding is consistent with that of Szanto et al., 1998. Contradictory findings are reported by Takahashi et al., 1995, stating non attempters have strong

family history than attempters. But the results were discarded on the back ground of small sample size making it statistically insignificant.

With the background of proximal or triggering event, females in the present study are found to have slightly higher chances to be triggered for suicide by relationship problems, interpersonal conflicts and problems with the close ones. This suicidal behaviour by females to end their life is done to escape from intolerable situation or to gain relief from an unbearable state of mind. These suicide attempts by females are “mostly a cry for help”, or to “express their feeling of need to be cared”. The other important triggers are criticism specially from the closed ones, financial dependence following retirement, debt taken for children’s marriage and inability to physically perform the same level of work making them ask for alms for daily needs. Other important and interesting finding is to die pre maturely with intact health than dying with age related complication (“fear of ageing”). Another important reason is the physical illness and intractable pain associated with it. These ‘trigger events’ are consistent with that from the Interpersonal Theory of Suicide by Van Order et al., 2010.

This study also focuses on the number of protective factors for both the genders and found that there is no significant difference between them. The more the number of protective factors better is the future

treatment success. The study from Turvey et al 2002 showed that having greater number of friends and relatives to confide was associated with reduced suicide risk in elderly.

This study shows strong correlation between depression and suicidal behaviour with p value 0. 001. This correlation is slightly higher in female comparison to males. Similar results are mentioned in different studies relating depression with late life suicide but with different prevalence rate from 40% to 94. 8%. (Chiu et al., 2004, Harwood et al., 2000, O' Conell et al., 2004, Beautrais et al., 2002, Venkoba rao,1994). The lower rates were found in Takahashi et al., 1995, and De leo et al 2002 but the results were not accepted due to high attrition rate. Other important finding is most of the time depression in late life goes undiagnosed due to its atypical presentation. As in this study the number of undiagnosed cases reported and confirmed and started on treatment after geriatric depression scale scoring was nearly 25 %. Lynesss et al., 2006 states 75% conversion rate from sub syndromal depression to syndromal depression stage within one year.

Depression and its association with burden of physical illness is still a unsolved mystery. Till now we don't know the exact pathway of primary and secondary depression associated with physical illness.

Other important psychological variable linked with suicidal behaviour is hopelessness with p valve of 0. 043. This results is found to be consistent with results of Dennis et al 2005, Sazanto et al 1998. The study by Dennis et al., reports that depressed individuals with significant hopelessness are more prone to commit suicide than individuals with depression alone. In another study by Rifai et al., 1994,including patient with depression in remission on treatment, hopelessness was found to be significantly co related with suicide.

One new factor assessed in this study is impulsivity. Impulsivity score was found to be significantly related with suicidal behaviour in this study (p=0. 007), particularly in females than males (66% females scores high on impulsivity scale compared to 44% male). Importance of impulsivity in suicide is mentioned in various studies (Reynard et al 2003., Guilfi et al 2000, Brent et al., 1994). But its association is mostly studied in young and adolescent population. One mixed age covering 17 yrs to 65 yrs) study by Wayder et al., 2006 found most of the persons committing suicide get the idea of self harm in last 10 min or less before the event. Same results were replicated by De leo et al., 2007. To establish the independent impact of impulsivity on suicide Aptex et al., 1995, Fergeuson et al., 2000, published reports removing the confounding effect of mood disorder and substantiating their finding stating

impulsivity makes a person prone to high risk behaviour, substance use, high novelty seeking in turn leading to self injurious behaviour.

According to this study there is significant co-relation between suicidal behaviour and perceived loneliness (p = 0. 042), but no significant difference is observed among gender. Similar results were reported by Dennis et al., 2005, Rubenowitz et al., 2001 and Szanto et al., 2011. Perceived loneliness plays important role in suicidal behaviour in late life, as it alters the mental well being. Various reasons making the individual vulnerable are physical disability, financial dependent retirement and loss of closed ones. According to Beautrais et al 2002, its not being alone but perceived loneliness with lower level of social contacts, support and recent stressful life events which lead to suicidal behaviour in late life. Harwood et al., 2006 linked loneliness to chronic interpersonal conflict stating a pathway – chronic interpersonal conflict leading to increase in perceived loneliness and decreased perceived social support and finally to depression and suicide.

This study show similar type of coping strategy in both the groups of elderly. Among the cases, females are having slightly higher tendency for negative coping skills than male (43%). Following emotional discharge and avoidance type rather positive appraisal and problem focused approach. Coping which is one of the four psychological strain

for suicidal behaviour have strong implication in management and prevention of suicide is well studied in young age (Dixon et al., 1991, Rudd et al., 1994). The only study mentioning about negative approach to problem and suicide in late life is by Reinecha et al 2001. Similar explanation was given by D Zurilla et al 2004 that negative coping and problem solving attitude make problems as threat to individual's well being creating self doubt and increased level of distress and finally this negative coping leads to depression and suicide.

Still studies are needed to be done to find out the consistent relation between these variables in future.

One more psychological dimension studied in this study is - thought about the meaning of life, to assess sense of coherence among the cases and controls, but no significant difference is obtained between the groups (p=0. 46). This variable has been studied in young adults to assess their attitude towards suicide

This study was an attempt to assess the thought about meaning of life in late life, regarding the presence of purpose to live, significance of life. This domain need further study to come to conclusion regarding its role in suicidal behaviour.

Sociological variables are found to have significant correlation with suicidal behaviour. One such domain is perceived social support which has two components - interaction and satisfaction, both found to have significant impact (p=<0. 001). But no significant difference is noted between males and females. The results of this study is consistent with the findings of other studies by Stacks et al., 1992, Shneidme 1993, 1994 Szanto et al 1998,Canavagh et al., 2003. They all conclude that individuals with suicidal behaviour are found to have lower perceived social support. This lack of perceived social support is explained by interpersonal loss, shrinkage of social network, physical illness by Harrison et al 2011, Duberstein et al., 2004, Beautrais et al., 2002 ; and Harwood et al.). Again this has its implication in forming prevention strategy focussing on psychological well being – the sense that one's need are met and that one is needed – rather objective availability of people in social network (Sheldon Cogen 1983).

Second sociological variable assessed is Level of expressed emotion. Of all, criticism especially from closed ones was found to be significantly associated with suicidal behaviour in present study (p=<0. 001) Similar findings are reported in adolescent suicide and self injurious behaviour by Weideg and Nock et al., 2007. They concluded their study indicating parental criticism is significantly associated with self injurious

thought and behaviour in adolescent suggesting specific pathway for intervention. Other important pathway linking expressed emotion and suicide is its effect on onset, relapse and maintenance of mental illness (Asarnow et al., 2001). But still we are lacking strong studies in elderly to support the independent role of criticism in suicide, removing the confounding effect of mood disorder (depression). Interventions done to decrease or lessen the level of expressed emotion at home has proven effective in reducing patient relapse in number of psychiatry disorder in turn decreasing the rate of suicide. Anju Mathew and Anil Prabhaker., 2013 concluded that perceived criticism was a significant risk factor for attempted suicide with its strong implication in the genesis, treatment and prevention of attempted suicide

Third sociological variable was life events – In this study there is no significant association between suicidal behaviour and number of life events observed. But there is significant difference in mean scores of life events between the groups (p=<0. 043). Similar findings were obtained from the studies done by, Cheng, 1989; Chen et al., 1995; Stack, 2000b suggesting impact of life events on the suicidal behaviour. The most robust life event from the study was relationship problem and physical health.

Bereavement was not found to play any significant role. Two cases were reported in the phase of bereavement but in both of them the pre-existing depressive illness played strong confounding variable. Similar observation is presented by Szanto et al., 1997

Important risk factors obtained after the multivariate analysis followed by hierarchical linear logistic regression are – being single, male gender, increasing age, with history of mental illness previous suicidal behaviour, use of alcohol, suffering from physical illness with associated functional impairment and disability, psychologically impulsive, with presence of significant score on depression and hopelessness. ultimately triggered by criticism, negative life event and poor social support.

CONCLUSION

This thesis is an attempt to void some of the gap in research assessing risk factors for suicidal self directed violence in late life. With aim that the obtained findings can help us in developing some strong preventive measures to control this pre mature termination of life.

1. Regarding the event details and relations –

   - ✓ Both the sex prefer their home for the event, most common method employed is poisoning in both the gender.
   - ✓ Male are more prone to attempt in morning or late night, while females afternoon and evening.
   - ✓ Use of alcohol is present in significant number of males.
   - ✓ Most of the subjects with suicidal self directed violence are taken for in patient care.
   - ✓ Males score high on risk score compared to females, low on the rescue score and high on the risk –rescue ratio scores.
   - ✓ Females scores moderate in both risk and rescue score scale.

2. There is significant role of physical illness and suicidal behaviour in late life, for both the genders.

3. Previous history of mental illness is an important risk factor.

4. Previous suicidal behaviour is noticed, specially in females.

5. Previous suicidal thought found to be in males more predominant than female.

6. Family history of suicidal behaviour has no significant role to play.

7. Most important precipitating proximal event is relationship problem for both the groups, with females at slightly higher risk.

8. Presence of physical illness and the mental illness with the impairment and disability caused by them is significantly associated with suicidal behaviour in both the genders.

9. Depression found to play significant role in suicidal behaviour in late life.

10. Hopelessness score on higher side among the cases with suicidal behaviour than normal controls.

11. Impulsivity found to be significantly associated with the suicidal SDV specially in female gender.

12. Perceived Loneliness is found to have significant role to play in suicidal SDV in late life.

13. Level of expressed emotion especially criticism found to be significantly associated with suicidal SDV.

14. Perceived lack of social support is a significant risk factor for suicidal SDV in elderly.

15. It’s not the number of life events but the mean scores of the life events, found significantly to the suicidal SDV in elderly.

IMPLICATION

Given that suicide in late life has found to be a complex multi dimensional problem. There is need for developing multi pronged approach to target individuals with suicidal SDV at micro level and extend it to population or society at the macro level. In recent years, voluminous research have been done in the field of suicide, basically focused on the identification of causes and significant risk factors implied in the causation of suicide. (Jenkins et al., 2002, Knox et al., 2004, Hawton et al., 1997)

WHO has given due importance to suicide, not just by providing with resources, but also making it paramount priority. The WHO has targeted to decrease the suicide rate by 10% by 2020 in high risk areas of the World under **Mental Health Gap Action Programme**.

Still there is a need of an aggressive and comprehensive strategy for preventing late life suicide. Especially in the back ground of booming geriatric population and the problems associated with them.

As the study results shows we need to tackle the alarming problem of elderly suicide in a collaborative manner. Focussing on all the axis and domain, with the proper integration from all the sphere of treatment modality available. In the intervention strategy model in late life suicide

Conwell in his paper published in 2014 in American Journal of Preventive Medicine, He suggest to target the problem classifying them in five domains AXIS 1-psychopathology, Axis 2personality and coping, Axis 3- physical health, Axis 4- social context, Axis 5- functioning (Bluemethal and Kupfer., 1986). He suggest to target these five axis with the help of Driver Design. Preventive strategy requires involvement of **GENERAL HEALTH SECTOR** to minimize mental and physical health morbidity and and improve functioning,(targeting Axis 1,3 and 5). Improvement of **MENTAL HEALTH CARE** to provide easily, accessible, affordable and acceptable care to the elderly (targeting Axis 1). And last but not the least **SOCIAL CONNECTEDNESS** – interventions to increase social network, support in addressing problems related to family dysfunction and importantly help individuals to adopt to age related changes. This can be very well utilized in our set up to target the elderly in need.

LIMITATION

This study found to have certain limitation. Higher degree of sophistication and increased generalizability would have been achieved if certain factors were considered –

1. Purposive hospital based sampling, it will be better to replicate the same study in community set up.
2. It would to helpful if other age group sample were included, to compare
3. Single centre study.
4. Longitudinal follow up will give some more light on the problem.
5. Scale used are need to be validated for our population.
6. Assessment of economical burden caused by SDV.

FUTURE DIRECTIONS

There have been voluminous literature to explain the risk factor for suicide but most of them are hospital based, small sample.

- ✓ There is a need for well designed population based study to confirm the findings of the study.
- ✓ There is need for prospective studies to confirm the role of these identified risk factors in repetition of suicidal SDV be fatal or non fatal.
- ✓ There is need to do biological research to establish role of cognitive decline, ageing related neurobiological process.
- ✓ There is need of cross cultural studies, to significantly establish the role played by social and cultural background in causation of suicide.
- ✓ There is need to make out the better integrated model including significant domain, to help in developing preventive strategy.
- ✓ There is need for intervention studies, targeting these risk factors to counter their impact, with regular auditing.

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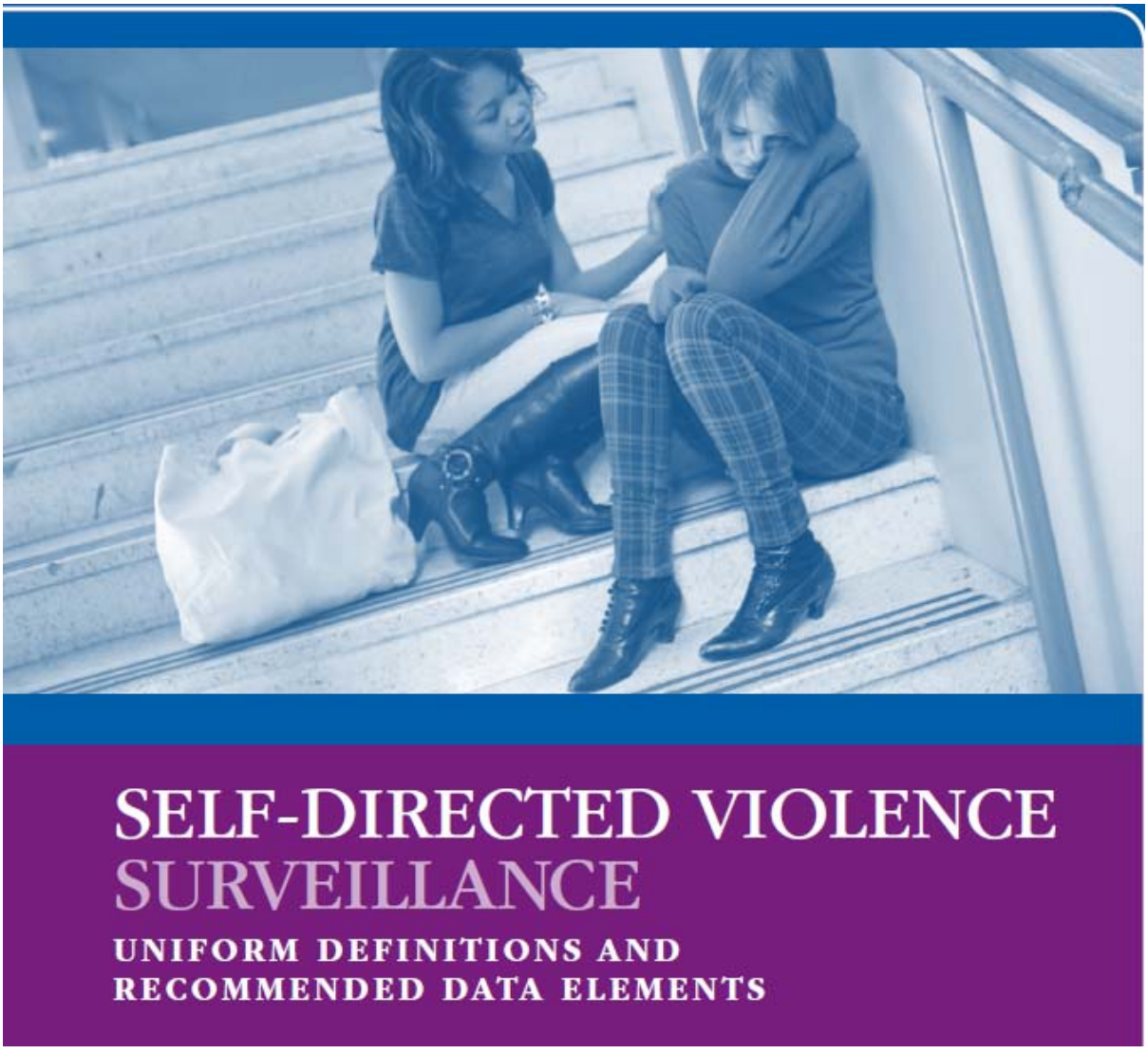
APPENDIX I

The socio demographic profile and the event related information have been collected in the thesis, as per the Centre for Disease Prevention AND control.

(CDC, Atlanta) Version 1. Published in Febuary 2011.

With few alteration regarding the socio - demographic profile , which is assessed in this study using Kuppusamy scale modified version 2014.



The data will be collected under four sub heading -1. Individual socio-demographic profile , 2.Event related information , 3.Individual and family history and 4. Associated factors .

APPENDIX II

Details regarding the psychiatric illness and diagnosis of psychiatric illness will be based on-

Schedule for Clinical Assessment in Neuropsychiatry (WHO, 1999).

Schedule for clinical assessment in neuropsychiatry (SCAN) are manuals created by the World Health Organization (WHO) for assessing, measuring and classifying the mental illness. It can be used in variety of settings like the clinical and research settings. This system work on has a bottom – up approach where clusters of symptoms are not driven by diagnosis outcome. Its stability and validity has been proven by various studies.

SCAN is a semi structured interview schedule with provision for cross examination of the subject. There is no fixed order of the flow of the interview which makes this instrument flexible and versatile. Each section of the schedules starts with the important questions about the symptoms pertaining to that section. If these questions are answered positively, then the questions below the cut-off point are also asked to the patient.

APENDIX III

The burden of physical illness is assessed using Cumulative Illness Rating Scale – Geriatric Version.

The geriatrics version of this scale has been developed with due attention to old age problems as CIRS-G.

Scoring –comprises of – total number of categories involved, total score, ratio total score to number of categories giving severity index.

CUMULATIVE ILLNESS RATING SCALE FOR GERIATRICS (CIRS-G)

Miller, Paradis, and Reynolds 1991

PATIENT_____AGE_____

RATER_____DATE_____

Instructions: Please refer to the CIRS-G Manual. Write brief descriptions of the medical problem(s) that justified the endorsed score on the line following each item. (Use the reverse side for more writing space).

RATING STRATEGY

0 - No Problem
1 - Current mild problem or past significant problem
2 - Moderate disability or morbidity/requires "first line" therapy
3 - Severe/constant significant disability/"uncontrollable" chronic problems
4 - Extremely Severe/immediate treatment required/end organ failure/severe impairment in function

	SCORE
HEART	_____
VASCULAR	_____
HEMATOPOIETIC	_____
RESPIRATORY	_____
EYES, EARS, NOSE AND THROAT AND LARYNX	_____
UPPER GI	_____
LOWER GI	_____
LIVER	_____
RENAL	_____
GENITOURINARY	_____
MUSCULOSKELETAL/INTEGUMENT	_____
NEUROLOGICAL	_____
ENDOCRINE/METABOLIC AND BREAST	_____
PSYCHIATRIC ILLNESS	_____
TOTAL NUMBER CATEGORIES ENDORSED	_____
TOTAL SCORE	_____
Severity Index: (total score/total number of categories endorsed)	_____
Number of categories at level 3 severity	_____
Number of categories at level 4 severity	_____

APPENDIX IV

The disability and functional impairment associated with the illness is assessed using GLOBAL ASSESSMENT OF FUNCTIONING (GAF).

GAF is a functional assessment method, developed with DSM- IV, to be used by various group of people like, clinicians, social, occupational therapist to assess individuals adaptability to daily activities.

Global Assessment of Functioning (GAF) Scale

(From DSM-IV-TR, p. 34.)

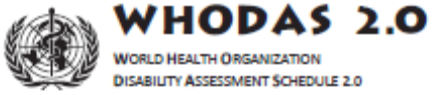
Consider psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. Do not include impairment in functioning due to physical (or environmental) limitations.

Code	(Note: Use intermediate codes when appropriate, e.g., 45, 68, 72.)
100 | 91	**Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. No symptoms.**
90 | 81	**Absent or minimal symptoms** (e.g., mild anxiety before an exam), **good functioning in all areas, interested and involved in a wide range of activities. socially effective, generally satisfied with life, no more than everyday problems or concerns** (e.g. an occasional argument with family members).
80 | 71	**If symptoms are present, they are transient and expectable reactions to psychosocial stressors** (e.g., difficulty concentrating after family argument); **no more than slight impairment in social, occupational or school functioning** (e.g., temporarily failing behind in schoolwork).
70 | 61	**Some mild symptoms** (e.g. depressed mood and mild insomnia) **OR some difficulty in social, occupational, or school functioning** (e.g., occasional truancy, or theft within the household), **but generally functioning pretty well, has some meaningful interpersonal relationships.**
60 | 51	**Moderate symptoms** (e.g., flat affect and circumstantial speech, occasional panic attacks) **OR moderate difficulty in social, occupational, or school functioning** (e.g.. few friends, conflicts with peers or co-workers).
50 | 41	**Serious symptoms** (e.g.. suicidal ideation, severe obsessional rituals, frequent shoplifting) **OR any serious impairment in social, occupational, or school functioning** (e.g., no friends, unable to keep a job).
40 | 31	**Some impairment in reality testing or communication** (e.g., speech is at times illogical, obscure, or irrelevant) **OR major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood** (e.g., depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children, is defiant at home, and is failing at school).
30 | 21	**Behavior is considerably influenced by delusions or hallucinations OR serious impairment in communication or judgment** (e.g., sometimes incoherent, acts grossly inappropriately, suicidal preoccupation) **OR inability to function in almost all areas** (e.g., stays in bed all day; no job, home, or friends).
20 | 11	**Some danger of hurting self or others** (e.g., suicide attempts without clear expectation of death; frequently violent; manic excitement) **OR occasionally fails to maintain minimal personal hygiene** (e.g., smears feces) **OR gross impairment in communication** (e.g., largely incoherent or mute).
10 | 1	**Persistent danger of severely hurting self or others** (e.g., recurrent violence) **OR persistent inability to maintain minimal personal hygiene OR serious suicidal act with clear expectation of death.**
0	Inadequate information.

APPENDIX V

World Health Organization Disability Assessment Schedule 2 (WHO DAS 2)

36 item interviewer version assessment schedule is used for assessing disability due to physical and psychiatric illness.



WHODAS 2.0

WORLD HEALTH ORGANIZATION
DISABILITY ASSESSMENT SCHEDULE 2.0

36-item version, interviewer-administered

Introduction

This instrument was developed by the WHO *Classification, Terminology and Standards* team, within the framework of the WHO/National Institutes of Health (NIH) Joint Project on Assessment and Classification of Disability.

Before using this instrument, interviewers must be trained using the manual *Measuring Health and Disability: Manual for WHO Disability Assessment Schedule – WHODAS 2.0* (WHO 2010), which includes an interview guide and other training material.

The versions of the interview available are as follows:

- 36-item – Interviewer-administered[a]
- 36-item – Self-administered
- 36-item – Proxy-administered[b]
- 12-item – Interviewer-administered[c]
- 12-item – Self-administered
- 12-item – Proxy-administered
- 12+24-item – Interviewer-administered

[a] A computerized version of the interview (*tShell*) is available for computer-assisted interviews or for data entry

[b] Relatives, friends or caretakers

[c] The 12-item version explains 81% of the variance of the more detailed 36-item version

For more details of the versions please refer to the WHODAS 2.0 manual *Measuring Health and Disability: Manual for WHO Disability Assessment Schedule – WHODAS 2.0* (WHO 2010).

Permission to translate this instrument into any language should be obtained from WHO, and all translations should be prepared according to the WHO translation guidelines, as detailed in the accompanying manual.

For additional information, please visit www.who.int/whodas or contact:

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APPENDIX VI

GERIATRIC DEPRESSION SCALE :

GDS short form is developed by Sheikh nd Yesavage in1986 is used for assessing depression.

This scale comprises of 15 questions with yes /no responses, specifically designed for elderly population covering their problems, about their feelings they experienced in the last seven days.

The GDS can be scored subjectively or objectively.

Geriatric Depression Scale (Short Form)

Patient's Name: _____ Date: _____

Instructions: Choose the best answer for how you felt over the past week.

No.	Question	Answer	Score
1.	Are you basically satisfied with your life?	YES / NO	
2.	Have you dropped many of your activities and interests?	YES / NO	
3.	Do you feel that your life is empty?	YES / NO	
4.	Do you often get bored?	YES / NO	
5.	Are you in good spirits most of the time?	YES / NO	
6.	Are you afraid that something bad is going to happen to you?	YES / NO	
7.	Do you feel happy most of the time?	YES / NO	
8.	Do you often feel helpless?	YES / NO	
9.	Do you prefer to stay at home, rather than going out and doing new things?	YES / NO	
10.	Do you feel you have more problems with memory than most?	YES / NO	
11.	Do you think it is wonderful to be alive?	YES / NO	
12.	Do you feel pretty worthless the way you are now?	YES / NO	
13.	Do you feel full of energy?	YES / NO	
14.	Do you feel that your situation is hopeless?	YES / NO	
15.	Do you think that most people are better off than you are?	YES / NO	
		TOTAL	

Scoring:

Assign one point for each of these answers:

1. NO	4. YES	7. NO	10. YES	13. NO
2. YES	5. NO	8. YES	11. NO	14. YES
3. YES	6. YES	9. YES	12. YES	15. YES

A score of 0 to 5 is normal. A score above 5 suggests depression.

Source:

- Yesavage J.A., Brink T.L., Rose T.L. et al. Development and validation of a geriatric depression screening scale: a preliminary report. J. Psychiatr. Res. 1983; 17:37-49.

APPENDIX VII

Becks Hopelessness Scale (BHS)-

BHS is developed by Aron T. Beck in the year 1974, to measure hopelessness. The hopelessness in this scale used is assessed in three different aspects – (1).lack of motivation, (2).expectations and (3).feeling.

It comprises of 20 – item self –assessing questionnaire.

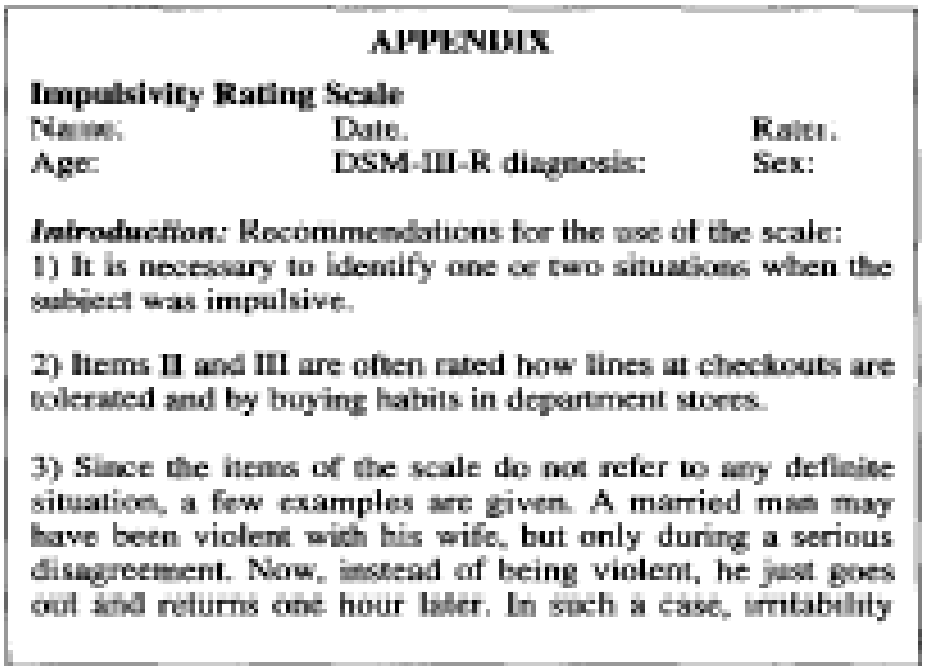
Table 3. Descriptive item-statistics of BHS

Items	Cor item
1. I look forward to the future with hope and enthusiasm.	
2. I might as well give up because there's nothing I can do about making things better for myself.	
3. When things are going badly, I am helped by knowing they cannot stay that way forever.	
4. I can't imagine what my life would be like in ten years.	
5. I have enough time to accomplish the things I want to do.	
6. In the future, I expect to succeed in what concerns me the most.	
7. My future seems dark to me.	
8. I happen to be particularly lucky, and I expect to get more of the good things in life than the average person.	
9. I just can't get the breaks, and there's no reason I will in the future.	
10. My past experiences have prepared me well for the future.	
11. All I can see ahead of me is unpleasantness rather than pleasantness.	
12. I don't expect to get what I really want.	
13. When I look ahead to the future, I expect that I will be happier than I am now.	
14. Things just don't work out the way I want them to.	
15. I have great faith in the future.	
16. I never get what I want, so it's foolish to want anything.	
17. It's very unlikely that I will get any real satisfaction in the future.	
18. The future seems vague and uncertain to me.	
19. I can look forward to more good times than bad times.	
20. There's no use in really trying to get anything I want because I probably won't get it.	

APPENDIX VIII

Impulsivity rating scale (IRS).

Lecrubier et al in 1995 gave fist specific scale to assess impulsivity with due importance to heterogenous nature of it. This scale comprises of seven different items for assessment like, irritability, time needed for decision making, capacity to continue with an activity, aggression, patience- impatience, capacity for delay and control of response



APPENDIX

Impulsivity Rating Scale

Name: Date. Rater.
Age: DSM-III-R diagnosis: Sex:

Introduction: Recommendations for the use of the scale:
1) It is necessary to identify one or two situations when the subject was impulsive.

2) Items II and III are often rated how lines at checkouts are tolerated and by buying habits in department stores.

3) Since the items of the scale do not refer to any definite situation, a few examples are given. A married man may have been violent with his wife, but only during a serious disagreement. Now, instead of being violent, he just goes out and returns one hour later. In such a case, irritability

APPENDIX IX

COPE inventory:

Developed by Carver et al 1989.

Derived from Lazarus and Folkman model of coping and Carver and Scheine model of self regulation.

Comprises of 14 scales with 28 items, time taken 10-15 min.

TABLE 1
Items of the Brief Cope, by Scale

1. Active Coping (α = .68)
   I've been concentrating my efforts on doing something about the situation I'm in.
   I've been taking action to try to make the situation better.
2. Planning (α = .73)
   I've been trying to come up with a strategy about what to do.
   I've been thinking hard about what steps to take.
3. Positive Reframing (α = .64)
   I've been trying to see it in a different light, to make it seem more positive.
   I've been looking for something good in what is happening.
4. Acceptance (α = .57)
   I've been accepting the reality of the fact that it has happened.
   I've been learning to live with it.
5. Humor (α = .73)
   I've been making jokes about it.
   I've been making fun of the situation.
6. Religion (α = .82)
   I've been trying to find comfort in my religion or spiritual beliefs.
   I've been praying or meditating.
7. Using Emotional Support (α = .71)
   I've been getting emotional support from others.
   I've been getting comfort and understanding from someone.
8. Using Instrumental Support (α = .64)
   I've been trying to get advice or help from other people about what to do.
   I've been getting help and advice from other people.
9. Self-Distraction (α = .71)
   I've been turning to work or other activities to take my mind off things.
   I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
10. Denial (α = .54)
    I've been saying to myself "this isn't real."
    I've been refusing to believe that it has happened.
11. Venting (α = .50)
    I've been saying things to let my unpleasant feelings escape.
    I've been expressing my negative feelings.
12. Substance Use (α = .90)
    I've been using alcohol or other drugs to make myself feel better.
    I've been using alcohol or other drugs to help me get through it.
13. Behavioral Disengagement (α = .65)
    I've been giving up trying to deal with it.
    I've been giving up the attempt to cope.
14. Self-Blame (α = .69)
    I've been criticizing myself.
    I've been blaming myself for things that happened.

APPENDIX X

UCLA Loneliness scale

UCLA Loneliness Scale , commonly used measure subjective feeling of loneliness or social isolation developed by University of California, Los Angeles. First published by Russell et al.

TABLE 1
UCLA Loneliness Scale (Version 3)

Instructions: The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by writing a number in the space provided. Here is an example:

How often do you feel happy?

If you never felt happy, you would respond "never"; if you always feel happy, you would respond "always."

NEVER	RARELY	SOMETIMES	ALWAYS
1	2	3	4

*1.	How often do you feel that you are "in tune" with the people around you?	_____
2.	How often do you feel that you lack companionship?	_____
3.	How often do you feel that there is no one you can turn to?	_____
4.	How often do you feel alone?	_____
*5.	How often do you feel part of a group of friends?	_____
*6.	How often do you feel that you have a lot in common with the people around you?	_____
7.	How often do you feel that you are no longer close to anyone?	_____
8.	How often do you feel that your interests and ideas are not shared by those around you?	_____
*9.	How often do you feel outgoing and friendly?	_____
*10.	How often do you feel close to people?	_____
11.	How often do you feel left out?	_____
12.	How often do you feel that your relationships with others are not meaningful?	_____
13.	How often do you feel that no one really knows you well?	_____
14.	How often do you feel isolated from others?	_____
*15.	How often do you feel you can find companionship when you want it?	_____
*16.	How often do you feel that there are people who really understand you?	_____
17.	How often do you feel shy?	_____
18.	How often do you feel that people are around you but not with you?	_____
*19.	How often do you feel that there are people you can talk to?	_____
*20.	How often do you feel that there are people you can turn to?	_____

Scoring:
Items that are asterisked should be reversed (i.e., 1 = 4, 2 = 3, 3 = 2, 4 = 1), and the scores for each item then summed together. Higher scores indicate greater degrees of loneliness.

Note.

APPENDIX XI

THE MEANING OF LIFE QUESTIONNAIRE

Assessed using Steger's Meaning in life (2006) questionnaire , The nature of one s being and existence .Mostly inspired by work of Frankls (1963) stating noogenic neurosis resulting in suicide and hopelessness.

Scale comprises of ten questions describing thought people sometimes have about their life (existence) .Individuals have to response how often they get these thought on lickert scale.

Scale
Please take a moment to think about what makes your life and existence feel important and significant to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
1	2	3	4	5	6	7

_____1. I understand my life's meaning.

_____2. I am looking for something that makes my life feel meaningful.

_____3. I am always looking to find my life's purpose.

_____4. My life has a clear sense of purpose.

_____5. I have a good sense of what makes my life meaningful.

_____6. I have discovered a satisfying life purpose.

_____7. I am always searching for something that makes my life feel significant.

_____8. I am seeking a purpose or mission for my life.

_____9. My life has no clear purpose.

_____10. I am searching for meaning in my life.

Scoring:
Item 9 is reverse scored.

Items 1, 4, 5, 6, & 9 make up the Presence of Meaning subscale
Items 2, 3, 7, 8, & 10 make up the Search for Meaning subscale

Scoring is kept continuous.

APPENDIX XII

Level of Expressed Emotions (LEE)

LEE scale is used to assess this sub domain .Original version comprises of 60 items , in this study 16 item modified scale covering level of intrusiveness , emotional response , attitude towards subjects and tolerance / expectation on subject by family member is used.

TABLE 2 Exploratory Factor Analysis of Chinese LEE S
Rotated Factor Matrix

Items	I
1. Is always interfering	
2. Says I cause my troubles to occur in order to get back at him/her	
3. Accuses me of exaggerating when I say I'm unwell	
4. Often accuses me of making things up when I'm not feeling well	
5. Often checks up on me to see what I'm doing	
6. Is always nosing into my business	
7. Always has to know everything about me	
8. Insists on knowing where I'm going	
9. Blames me for things not going well	
10. Gets angry with me when things don't go right	
11. "Flies off the handle" when I don't do something well	
12. Gets irritated when things don't go right	
Total variance explained	

APPENDIX XIII

Presumptive Life Event Scale

By Gurmeet Singh 1984 derived from Holms and Rahe life event scale .

Comprises of 51 items covering all the important Importance number of significant negative events from domains of relationship, family, work place, physical health and legal issues occurring in last one year.

TABLE 4 *Showing mean ranked stress scores and S. D. of each item*

Rank No.	Life events	Mean stress score
1.	Death of spouse	95
2.	Extra- marital relation of spouse	80
3.	Marital separation/divorce	77
4.	Suspension or dismissal from job	76
5.	Detention in jail of self or close family member	72
6.	Lack of child	67
7.	Death of close family member	66
8.	Marital conflict	64
9.	Property or crops damaged	61
10.	Death of friend	60
11.	Robery or theft	59
12.	Excessive alcohol or drug use by family member	58
13.	Conflict with inlaws (other than over dowry)	57
14.	Broken engagement or love affair	57
15.	Major personal illness or injury	56
16.	Son or daughter leaving home	55
17.	Financial loss or problems	54
18.	Illness of family member	52
19.	Trouble at work with colleagues, superiors or subordinates	52
20.	Prophecy of astrologer or palmist etc.	52
21.	Pregnancy of wife (wanted or unwanted)	52
22.	Conflict over dowry (self or spouse)	51
23.	Sexual problems	51
24.	Self or family member unemployed	51
25.	Lack of son	51
26.	Large loan	49
27.	Marriage of daughter or dependant sister	49
28.	Minor violation of law	48

APPENDIX XIV

Social Support Questionnaire

Developed by Sarson and Sarson in 1983, to assess perceived social support in individuals. This scale comprises of 6 items in two part each the first part evaluates the number of available others the individual feels he/she can turn on in the times of need in each variety of situation and gives number or perceived.

Sarason, I.G., Levine, H.M., Basham, R.B., & Sarason, B.R. (1983). Assessing Social Support: The Social Support Questionnaire. Journal of Personality and Social Psychology, 44, 127-139.

Social Support Questionnaire
SSQ

INSTRUCTIONS:

The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the person's initials and their relationship to you (see example). Do not list more than one person next to each of the letters beneath the question.

For the second part, circle how satisfied you are with the overall support you have.

If you have no support for a question, check the words "No one," but still rate your level of satisfaction. Do not list more than nine persons per question.

Please answer all questions as best you can. All your responses will be kept confidential.

EXAMPLE:

Who do you know whom you can trust with information that could get you in trouble?

No one	1) T.N. (brother)	4) T.N. (father)	7)
	2) L.M. (friend)	5) L.M. (employer)	8)
	3) R.S. (friend)	6)	9)

How satisfied?

6 - very satisfied	5 - fairly satisfied	4 - a little satisfied	3 - a little dissatisfied	2 - fairly dissatisfied	1 - very dissatisfied

INFORMATION SHEET

We are conducting a study on "**RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY : CASE CONTROL STUDY** " among patients attending Rajiv Gandhi Government General Hospita.

The purpose of this study is to assess risk factors for such behavior in this group (age>=50yrs) . We are selecting certain cases and if you are found eligible, we may be using your specimen to perform extra tests and special studies which in any way do not affect your final report or management.

The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time; your decision will not result in any loss of benefits to which you are otherwise entitled.

The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment.

Signature of Investigator | Signature of Participant

Date :

Place

ஆராய்ச்சிதகவல்தாள்

தலைப்பு: முதியோர்களில் தற்கொலை எண்ணமுடன்கூடிய சுயநோக்கு வன்முறைகளின் அபாய காரணிகள்

ஆராய்ச்சிசெய்பவரின்பெயர்: மரு. அகாங்ஷா சோனல்

பங்குகொள்வரின்பெயர்:

இடம் : இராஜிவ் காந்தி அரசு பொது மருத்துவமனை, சென்னை- 600003

ஆராய்ச்சியின் நோக்கம் : முதியோர்களில் தற்கொலை எண்ணமுடன்கூடிய சுயநோக்கு வன்முறைகளின் அபாய காரணிகள்பற்றிய ஆய்வு நடைபெறுகிறது. நீங்களும் இந்த ஆராய்ச்சியில் பங்கேற்க விரும்புகிறோம்.

முடிவுகளை அல்லது கருத்துக்களை வெளியிடும்போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆய்வின் முடிவுகளை ஆராய்ச்சியின்போது அல்லது ஆராய்ச்சியின் முடிவின் போது தங்களுக்கு அறிவிக்கப்படும் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளரின்கையொப்பம் **பங்கேற்பாளர்கையொப்பம்**

நாள்: _____

இடம்: _____

ஆராய்ச்சிஒப்புதல்படிவம்

ஆராய்ச்சியின்தலைப்பு: முதியோர்களில் தற்கொலை எண்ணமுடன்கூடிய சுயநோக்கு வன்முறைகளின் அபாய காரணிகள்.

பங்குகொள்வரின் பெயர்:

ஆராய்ச்சிசெய்பவரின்பெயர்: மரு. அகாங்ஷா சோனல்

இடம் : இராஜிவ் காந்தி அரசு பொது மருத்துவமனை, சென்னை-600003.

எனும் நான், எனக்கு கொடுக்கப்பட்ட தகவல் தாளினை படித்து புரிந்துகொண்டேன். நான் 18 வயதை கடந்திருப்பதால் என்னுடைய சுய நினைவுடனும் மற்றும் முழு சுதந்திரத்துடனும் இந்த ஆராய்ச்சியில் என்னைச் சேர்த்துக்கொள்ள சம்மதிக்கிறேன்.

நான் எனக்கு கொடுக்கப்பட்ட தகவல் தாளினை படித்து புரிந்துகொண்டேன். எனக்கு இந்த ஆராய்ச்சியின் ஒப்புதல் படிவம் விளக்கப்பட்டது. எனக்கு இந்த ஆராய்ச்சியின் நோக்கமும், விவரங்களும் விளக்கப்பட்டது. எனக்கு என்னுடைய உரிமைகளை பற்றி விளக்கப்பட்டது. நான் இதுவரை எடுத்துக்கொண்ட அணைத்து மருத்துவ முறைகளைப் பற்றி தெரிவித்திருக்கிறேன். இந்த ஆராய்ச்சியில் இருந்து நான் எந்நேரமும் பின் வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் எற்படாது என்பதையும் நான் புரிந்துகொண்டேன். என்னை பற்றிய எந்த தகவல்களும் அடையாளமும் வெளியிடபட மாட்டாது என்பதை நான் புரிந்துகொண்டேன். என்னுடைய முழு சுதந்திரத்துடனும் இந்த ஆராய்ச்சியில் என்னைச் சேர்த்துக்கொள்ள சம்மதிக்கிறேன்.

பங்கேற்பாளர்கையொப்பம்ஆராய்ச்சியாளரின்கையொப்பம்

நாள்: _____

இடம்: _____

PATIENT CONSENT FORM

Study Detail	:	**RISK FACTORS FOR SUICIDAL SELF-DIRECTED VIOLENCE IN ELDERLY : CASE CONTROL STUDY**
Study Centre	:	Rajiv Gandhi Government General Hospital, Chennai.
Patient's Name	:	
Patient's Age	:	
Identification Number	:	

Patient may check (☑) these boxes

I confirm that I have understood the purpose of procedure for the above study. I have the opportunity to ask question and all my questions and doubts have been answered to my complete satisfaction. ☐

I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving reason, without my legal rights being affected. ☐

I understand that sponsor of the clinical study, others working on the sponsor's behalf, the ethical committee and the regulatory authorities will not need my permission to look at my health records, both in respect of current study and any further research that may be conducted in relation to it, even if I withdraw from the study I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published, unless as required under the law. I agree not to restrict the use of any data or results that arise from this study. ☐

I agree to take part in the above study and to comply with the instructions given during the study and faithfully cooperate with the study team and to immediately inform the study staff if I suffer from any deterioration in my health or well being or any unexpected or unusual symptoms. ☐

Signature/thumb impression

Patient's Name and Address:

:

Signature of Investigator

Dr. AKANKSHA SONAL

age	sex	religion	marital status	number ofissues	address	education	occupation	income	socioeconomic status	family type	place of event	time of event 24hrs time	type of poison	mechanism	icd	alcohol use at time of event	disposition/given treatment	risk score	risk grade	rescue score	rescue grade	risk rescue ratio	risk rescue grade	previous suicidal thought	previous suicidal behaviour	family history	proximal factor	protective factors	no of protective factors	somatic illness	menatal illness/ ALCOHOL	cumulative illness rating scaleirs	global assessment of functioning	who das 2 (36 version)	geriatric depression scale (gds) score	gds severity	hopelessness score	hopelessness	loneliness score	loneliness	impulsivity scores	impulsivity grade	coping	coping positive or negative	coping score	thought about meaning of ;life	thought about meaning of life	social support score(INTEGRATION)	SOCIAL SUPPORT (SATISFACTION)	life events (no)	level of expressed emotion	level of expressed emotion
55	2	1	1	3	1	graduate	SKILLED	18000-3601	UPPER M	1	1	12	ant killer	10	69	0	13	10	modera	8	low	55	modera	1	0	1	6	2,1,5	3	0	1	6	6	11	6	mild	6	mild	12	never	5	normal	proble	positiv	1	presenc	1	6	5	2	norma	1
55	2	1	2	3	2	PRIMARY	UNEMPL	1803-5386	LOWER M	2	1	15	RAT KILL	10	69	0	13	11	mod-hig	11	moder	50	modera	1	0	0	6	5,1,2	3	0	0	5	8	12	4	no	2	no	26	some t	12	impulsive	avoida	negati	0	searchi	0	2	2	0	hostilit	4
55	2	1	2	2	2	ILLITERATI	UN- SKIL	8989-13494	UP-LOWE	1	1	21	oleander	10	64	0	13	12	mod-hig	8	low	60	high	1	0	0	16	2,5	2	1	1	14	6	14	8	mild	7	mild	36	often	4	normal	proble	positiv	1	presenc	1	3	3	0	over ir	2
45	2	1	1	1	3	PRIMARY	UN- SKIL	13495-1799	UP-LOWE	1	1	4	cell oill	10	69	0	13	10	modera	10	moder	50	modera	1	0	0	4	5,2,1	3	0	0	6	7	11	5	mild	3	no	22	rarely	18	impulsive	positiv	positiv	1	presenc	1	4	4	2	over ir	2
56	2	2	2	3	2	plus 2	UNEMPL	1803-5386	UPPER M	1	1	13	opc	10	68	0	13	10	modera	10	moder	50	modera	1	0	0	2	4,5	2	0	1	3	7	11	9	modera	7	mild	21	rarely	17	impulsive	positiv	positiv	1	presenc	1	4	2	1	norma	1
57	2	3	1	0	1	ILLITERATI	SEMI SK	1803-5386	LOWER M	1	1	20	carbolic a	10	66	0	13	12	modera	10	moder	54	modera	3	1	1	3	2,8,6	3	1	1	10	6	12	10	modera	11	modera	27	some t	5	normal	proble	positiv	1	presenc	1	5	5	0	norma	1
59	2	1	2	1	3	SSLC	UNEMPL	1803-5386	LOWER M	1	1	15	multiple ta	10	61	0	10	12	mod-hig	8	low	60	high	2	0	0	4	,4,5	2	0	0	6	8	10	5	mild	3	no	21	rarely	12	impulsive	emotio	negati	0	searchi	1	2	2	0	criticis	3
60	2	3	2	0	1	PRIMARY	UN- SKIL	1803-5386	UP-LOWE	1	1	22	alprax	10	61	0	14	10	modera	10	moder	50	modera	2	0	0	4	5,4	2	0	1	5	6	10	9	modera	8	mild	28	some t	4	normal	proble	positiv	1	presenc	0	3	4	0	over ir	2
60	2	1	1	3	2	ILLITERATI	UNEMPL	8989-13494	LOWER M	1	5	12	OPC	10	68	0	13	13	high	10	moder	56	modera	1	0	0	2	5	1	1	0	12	7	12	3	no	3	no	22	rarely	15	impulsive	avoida	negati	0	searchi	0	2	2	0	criticis	3
60	2	1	2	0	2	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	1	14	insecticide	10	68	0	13	10	modera	10	moder	50	modera	2	1	0	2	4,2,1	3	0	0	6	8	10	4	no	3	no	23	rarely	19	impulsive	emotio	negati	0	searchi	0	4	4	1	norma	1
60	2	1	2	0	2	PRIMARY	UNEMPL	13495-1799	UP-LOWE	1	1	22	opc	10	68	1	12	12	mod-hig	10	moder	54	modera	2	0	1	4		1	0	1	5	5	11	7	mild	112	modera	22	rarely	9	impulsive	positiv	positiv	1	presenc	1	6	6	0	norma	1
60	2	1	2	1	3	MIDDLE	UN- SKIL	1803-5386	LOWER M	1	1	16	crane kille	10	69	0	13	10	modera	10	moder	50	modera	1	0	1	16	5,2	2	1	1	13	8	8	8	mild	13	modera	25	some t	9	impulsive	emotio	negati	0	searchi	0	2	3	2	over ir	2
62	2	1	1	3	1	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	1	23	alprax	10	61	0	13	12	mod-hig	10	moder	54	modera	2	1	0	2	5	1	0	1	5	6	10	11	modera	6	mild	26	some t	4	normal	proble	positiv	1	presenc	1	4	4	0	over ir	2
64	2	1	2	3	2	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	5	14	oleander	10	64	1	10	10	modera	10	moder	50	modera	1	1	0	16	2,4,5	3	0	0	5	7	11	4	no	2	no	21	rarely	15	impulsive	emotio	negati	0	presenc	1	2	2	0	criticis	3
64	2	1	1	0	2	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	2	3	22	rat killer	10	69	0	13	14	high	8	low	63	high	1	0	1	16	5,4,2,1	4	0	0	6	8	11	5	mild	3	no	23	rarely	19	impulsive	avoida	negati	0	searchi	0	5	2	3	over ir	2
64	2	2	2	3	3	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	22	hanging	12	70	0	10	12	mod-hig	8	low	60	high	1	1	0	2	1,4,5	3	1	1	12	6	2	9	modera	11	modera	33	often	5	normal	proble	positiv	1	presenc	1	3	3	1	criticis	3
65	2	1	1	0	1	MIDDLE	UN- SKIL	1803-5386	LOWER M	1	1	18	rat killer	10	69	0	13	10	modera	8	low	55	modera	2	0	0	2	2,3	2	0	0	4	7	9	3	no	1	no	16	never	12	impulsive	emotio	negati	0	searchi	0	2	2	0	norma	1
65	2	1	2	0	1	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	1	18	sedative	10	61	1	10	12	mod-hig	8	low	60	high	2	0	0	4	4,5	2	0	1	4	6	10	12	severe	15	severe	32	often	4	normal	proble	positiv	1	presenc	1	1	1	0	hostilit	4
61	2	1	1	0	1	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	1	13	OPC	10	68	0	13	8	low mo	13	high m	38	low	1	0	1	1	5,3,4	3	1	0	14	4	8	2	no	3	no	15	never	14	impulsive	positiv	positiv	1	presenc	1	4	4	0	criticis	3
64	2	1	2	3	3	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	11	terpentine	10	69	0	13	14	high	6	low	70	high	1	0	0	6	5	1	0	0	5	5	11	4	no	4	no	12	never	17	impulsive	emotio	negati	0	presenc	1	1	1	2	over ir	2
66	2	1	1	0	2	MIDDLE	SEMI SK	1803-5386	LOWER M	1	6	12	antipsy	10	61	0	12	8	low mo	10	moder	44	modera	2	0	1	3	8,5,4	3	1	1	13	7	10	10	modera	7	mild	25	some t	18	impulsive	emotio	negati	0	presenc	1	3	3	0	norma	1
60	2	2	1	0	1	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	5	14	cowdung	10	68	0	13	10	modera	10	moder	50	modera	4	1	0	3	4,5	2	0	0	5	7	9	9	modera	11	modera	35	often	6	normal	proble	positiv	1	presenc	1	2	2	0	hostilit	4
60	2	1	2	2	1	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	2	1	6	HANGING	12	70	0	13	11	mod-hig	9	low	55	modera	2	0	0	3	5	1	0	0	5	8	8	4	no	2	no	16	never	16	impulsive	avoida	negati	0	searchi	0	2	2	0	criticis	3
60	2	1	1	3	2	plus 2	UN- SKIL	13495-1799	UP-LOWE	1	1	22	hanging	12	60	0	13	10	modera	10	moder	50	modera	3	0	0	3	5,2	2	1	1	14	6	10	9	modera	6	mild	28	some t	14	impulsive	positiv	positiv	1	presenc	1	4	4	0	over ir	2
61	2	1	2	2	1	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	1	2	ant killer	10	69	0	10	10	modera	10	moder	50	modera	1	0	1	2	1,4,5	3	0	0	5	7	11	3	no	2	no	13	never	15	impulsive	emotio	negati	0	searchi	0	2	2	3	criticis	3
61	2	1	1	2	3	ILLITERATI	UNEMPL	1803-5386	LOWER	1	1	16	burn	2	76	0	13	12	mod-hig	10	moder	54	modera	5	2	1	2	5,2,6	3	0	1	6	4	8	2	no	2	no	11	never	11	impulsive	positiv	positiv	1	presenc	1	5	5	0	norma	1
64	2	1	2	1	3	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	5	18	ratkiller	10	69	0	13	10	modera	10	moder	50	modera	3	1	0	4	5,2	2	0	1	6	6	9	9	modera	11	modera	27	some t	12	impulsive	positiv	positiv	1	presenc	1	2	2	0	over ir	2
65	2	1	2	0	1	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	20	opc	10	68	0	13	14	high	9	low	61	high	1	0	0	2	5,4,2	3	0	0	4	7	8	4	no	3	no	23	rarely	18	impulsive	emotio	negati	0	searchi	0	6	2	2	hostilit	4
65	2	1	1	0	1	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	22	cowdung	10	68	0	13	10	modera	8	low	55	modera	1	0	0	2	8,5,4	3	0	0	7	8	10	4	no	3	no	24	rarely	6	normal	proble	positiv	1	presenc	1	3	3	0	criticis	3
70	2	1	1	2	2	ILLITERATI	UN- SKIL	8989-13494	UP-LOWE	1	1	2	electric bu	4	76	0	12	10	modera	10	moder	50	modera	4	1	0	2	5,4	2	1	0	16	7	11	5	mild	6	mild	26	some t	13	impulsive	positiv	positiv	1	searchi	0	2	2	0	over ir	2
75	2	1	1	3	2	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	20	sedative	10	61	0	12	10	modera	10	moder	50	modera	2	0	0	1	1,4	2	1	1	14	6	8	9	modera	12	modera	35	often	5	normal	proble	positiv	1	searchi	0	4	4	0	norma	1
80	2	1	1	2	2	ILLITERATI	UNEMPL	1803-5386	LOWER	1	1	14	hanging	12	70	0	13	12	mod-hig	8	low	60	high	1	0	0	2	2,4,5	3	0	0	6	7	10	8	mild	4	no	24	rarely	3	normal	proble	positiv	1	presenc	1	2	2	0	hostilit	4
58	1	3	1	0	1	graduate	SKILLED	18000-3601	UPPER M	1	1	4	iron folic a	10	62	0	12	10	modera	10	moder	50	modera	1	0	1	1	4,5	2	1	1	12	6	9	12	severe	6	mild	27	some t	5	normal	proble	positiv	1	presenc	1	1	1	2	hostilit	4
55	1	1	2	0	2	PRIMARY	UNEMPL	8989-13494	UP-LOWE	2	1	2	tablet	10	62	1	12	12	mod-hig	10	moder	54	modera	1	0	0	2	5	1	1	0	12	8	12	4	no	2	no	16	never	15	impulsive	positiv	positiv	0	searchi	0	2	2	0	hostilit	4
57	1	1	2	2	2	ILLITERATI	UNEMPL	1803-5386	LOWER	1	1	5	opc	10	68	0	13	13	high	8	low	62	high	1	0	0	3	6	1	0	1	6	6	12	9	modera	7	mild	22	rarely	8	normal	proble	positiv	1	searchi	0	6	3	2	norma	1
67	1	1	1	1	3	plus 2	SKILLED	1803-5386	LOWER M	1	1	8	self immol	2	76	0	13	14	high	8	low	63	high	3	0	1	2	2,6	2	0	0	5	7	8	2	no	2	no	26	some t	18	impulsive	avoida	negati	0	presenc	1	4	4	3	criticis	3
57	1	1	2	3	2	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	14	rat killer	10	69	0	12	13	high	8	low	62	high	1	0	0	3	1,2	2	0	1	2	6	9	11	modera	1	no	24	rarely	6	normal	proble	positiv	1	searchi	0	2	2	1	over ir	2
65	1	1	1	2	1	SSLC	SEMI SK	8989-13494	UP-LOWE	1	1	12	insecticide	10	68	0	13	10	modera	8	low	55	modera	2	0	0	6	5	1	0	0	3	4	8	5	mild	4	no	27	some t	5	normal	proble	positiv	1	presenc	1	3	3	0	over ir	2
56	1	1	2	1	3	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	1	opc under	10	68	1	13	13	high	8	low	62	high	2	0	0	3	2,3	2	1	1	11	5	10	2	no	4	no	15	never	3	normal	proble	positiv	1	searchi	0	2	2	0	norma	1
60	1	1	2	0	1	plus 2	SKILLED	1803-5386	LOWER M	1	1	4	opc	10	68	0	13	10	modera	8	low	55	modera	2	0	0	1	3	1	1	1	11	7	12	9	modera	8	mild	28	some t	3	normal	proble	positiv	1	presenc	1	2	2	4	over ir	2
57	1	2	1	0	2	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	1	5	17	insecticide	10	68	1	13	13	high	8	low	62	high	1	0	1	0	4	1	0	1	6	5	8	4	no	7	mild	29	some t	13	impulsive	avoida	negati	0	searchi	0	2	2	0	norma	1
55	1	1	2	4	2	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	23	pyrethrin	10	68	1	13	13	high	8	low	62	high	4	1	0	2	5	1	0	1	7	4	10	5	mild	3	no	22	rarely	15	impulsive	positiv	positiv	1	presenc	1	3	3	0	norma	1
60	1	1	2	0	2	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	10	opc paraly	10	68	0	13	12	mod-hig	8	low	60	high	2	0	0	1	1,6,7	3	1	1	18	6	9	9	modera	10	modera	23	rarely	5	normal	proble	positiv	1	presenc	1	2	2	0	over ir	2
60	1	3	2	1	3	SSLC	SEMI SK	1803-5386	LOWER M	1	1	16	pyrethrin	10	68	0	13	13	high	9	low	59	modera	3	0	0	6	2,4,6	3	0	1	6	7	8	10	modera	11	modera	25	some t	6	normal	proble	positiv	1	presenc	1	2	2	3	criticis	3
59	1	1	1	4	1	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	23	insecticide	10	68	0	13	11	mod-hig	9	low	55	modera	2	1	1	16	4,5	2	0	1	7	6	12	8	mild	12	modera	28	some t	11	impulsive	positiv	negati	0	searchi	0	5	3	1	norma	1
64	1	3	2	3	2	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	5	9	hanging	12	70	1	13	13	high	8	low	62	high	3	0	0	4	1,3	2	0	0	6	7	10	3	no	2	no	13	never	18	impulsive	avoida	negati	0	presenc	1	3	3	2	criticis	3
60	1	1	1	0	2	ILLITERATI	UNEMPL	8989-13494	UP-LOWE	2	3	18	ala poison	10	66	0	12	10	modera	10	moder	50	modera	2	0	0	2	2,5	2	0	1	5	5	10	8	mild	17	severe	34	often	11	impulsive	avoida	negati	0	searchi	0	2	2	1	criticis	3
56	1	3	2	3	3	SSLC	SEMI SK	13495-1799	LOWER M	1	1	14	drug overd	10	62	1	12	10	modera	9	low	53	modera	1	0	0	3	3,7	2	1	1	11	4	9	2	no	2	no	11	never	11	impulsive	positiv	positiv	1	presenc	1	4	4	1	norma	1

71	1	1	1	4	1	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	13	opc	10	68	0	13	9	modera	8	low	53	modera	2	0	0	4	5,7	2	1	1	10	7	12	9	modera	6	mild	28	some ti	6	normal	proble	positiv	1	searchi	0	4	4	0	hostilit	4
59	1	1	2	0	1	plus 2	SKILLED	13495-1799	UPPER M	1	1	8	insulin inje	10	62	1	13	9	modera	9	low	50	modera	1	0	1	4	7,3	2	1	1	11	5	8	3	no	3	no	11	never	13	impulsive	positiv	positiv	1	presen	1	5	3	2	norma	1
56	1	1	1	0	1	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	17	stab injury	1	78	0	14	13	high	10	moder	57	modera	3	1	0	2	6,2	2	0	0	3	8	10	4	no	4	no	8	never	17	impulsive	positiv	positiv	1	searchi	0	2	2	0	criticis	3
60	1	1	2	4	3	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	10	petrol	10	66	1	13	12	mod-hig	10	moder	54	modera	1	0	0	2	2,1,5	3	0	1	5	6	9	9	modera	11	modera	27	some ti	5	normal	proble	positiv	1	presen	1	3	3	1	criticis	3
69	1	1	1	0	2	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	6	10	tab anti ep	10	62	0	12	11	mod-hig	9	low	55	modera	2	0	0	4	5,1,2	3	1	0	11	7	10	2	no	2	no	11	never	17	impulsive	avoida	negati	0	presen	1	2	2	2	norma	1
56	1	1	1	0	1	PRIMARY	UN- SKIL	13495-1799	LOWER M	1	5	6	corosive 6	10	66	0	13	12	mod-hig	8	low	60	high	2	0	0	16	2,5	2	0	0	6	7	8	4	no	3	no	23	rarely	5	normal	proble	positiv	1	presen	1	2	2	3	criticis	3
61	1	1	2	2	1	PRIMARY	UNEMPL	8989-13494	UP-LOWE	2	1	9	hanging	12	70	0	13	14	high	8	low	63	high	3	0	0	2	5,2,1	3	0	1	5	6	11	9	modera	7	mild	25	some ti	14	impulsive	positiv	positiv	1	presen	1	3	3	4	over ir	2
55	1	1	1	3	2	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	16	rat killer p	10	69	1	13	12	mod-hig	9	low	57	modera	3	1	0	16	,4,5	2	0	0	2	8	10	2	no	2	no	16	never	16	impulsive	positiv	positiv	1	searchi	0	4	2	5	criticis	3
69	1	1	2	2	1	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	3	opc	10	68	0	13	13	high	8	low	62	high	1	0	0	16	2,8,6	3	0	0	3	7	9	5	mild	12	modera	28	some ti	6	normal	proble	positiv	1	presen	1	2	2	1	criticis	3
71	1	1	1	2	3	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	22	opc interp	10	68	1	13	14	high	8	low	63	high	2	0	0	2	,4,5	2	1	1	11	5	8	9	modera	7	mild	27	some ti	14	impulsive	positiv	positiv	1	searchi	0	5	3	0	over ir	2
56	1	1	1	1	3	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	5	17	insecticide	10	68	0	13	12	mod-hig	9	low	57	modera	1	0	1	2	5,4	2	0	1	3	6	11	11	modera	12	modera	26	some ti	5	normal	proble	positiv	1	presen	1	4	4	4	norma	1
65	1	1	2	4	1	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	2	cut injury	1	78	1	14	14	high	8	low	63	high	2	0	0	4	5	1	0	0	3	7	10	3	no	3	no	13	never	17	impulsive	positiv	positiv	1	presen	1	2	2	2	criticis	3
65	1	1	1	0	1	graduate	SEMI SKI	13495-1799	LOWER M	1	1	10	tab anti ep	10	62	0	12	11	mod-hig	10	moder	52	modera	1	1	0	1	4,2,1	3	1	1	10	6	12	9	modera	7	mild	23	rarely	1	normal	proble	positiv	1	searchi	0	2	2	0	norma	1
55	1	1	1	2	2	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	12	opc	10	68	0	13	10	modera	10	moder	50	modera	2	0	0	6		3	0	0	5	9	10	2	no	2	no	11	never	4	normal	proble	positiv	1	presen	1	3	3	0	norma	1
75	1	1	1	4	2	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	2	asthelin ta	10	62	0	12	10	modera	12	moder	45	modera	3	0	1	3	5,2	2	0	0	3	9	9	3	no	4	no	12	never	3	normal	proble	positiv	1	presen	1	2	2	1	criticis	3
65	1	1	1	2	2	ILLITERATE	UNEMPL	1803-5386	LOWER	1	1	2	crane kille	10	69	1	13	12	mod-hig	8	low	60	high	1	0	0	3	5	1	0	0	4	8	11	5	mild	3	no	24	rarely	15	impulsive	positiv	positiv	1	searchi	0	6	4	3	over ir	2
67	1	1	2	0	2	MIDDLE	UN- SKIL	13495-1799	LOWER M	1	1	9	hanging h	12	70	1	13	14	high	8	low	63	high	3	1	0	3	2,4,5	3	0	1	5	7	10	3	no	4	no	24	rarely	6	normal	proble	positiv	1	presen	1	4	4	2	norma	1
69	1	1	2	4	2	MIDDLE	UN- SKIL	8989-13494	UP-LOWE	1	1	8	pesticide ,	10	68	1	13	15	high	8	low	65	high	2	0	0	3	5,4,2,1	4	1	1	9	4	9	2	no	3	no		never	9	impulsive	avoida	negati	0	searchi	0	2	2	1	norma	1
65	1	1	2	1	3	MIDDLE	UN- SKIL	8989-13494	UP-LOWE	1	1	7	insecticide	10	68	0	13	15	high	9	low	62	high	3	0	0	2	1,4,5	3	0	1	7	6	10	11	modera	7	mild	24	rarely	3	normal	proble	positiv	1	presen	1	2	2	0	norma	1
62	1	1	1	4	1	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	1	0	opc, planr	10	68	1	13	13	high	9	low	59	modera	4	2	0	2	2,3	2	0	0	6	8	11	6	mild	10	modera	28	some ti	10	impulsive	emotio	negati	0	searchi	0	2	2	2	criticis	3
53	1	3	2	3	2	MIDDLE	UN- SKIL	13495-1799	LOWER M	1	5	4	multiple cu	12	70	0	13	13	high	9	low	59	modera	4	4	0	4	,4,5	2	1	1	9	4	16	5	mild	9	modera	21	rarely	10	impulsive	avoida	negati	0	searchi	0	3	3	0	norma	1
56	1	1	1	0	2	ILLITERATE	UN- SKIL	8989-13494	UP-LOWE	2	3	19	opc psych	10	68	1	13	13	high	9	low	59	modera	4	2	1	2	5,3,4	3	0	1	7	4	12	3	no	3	no	16	never	8	normal	proble	positiv	1	presen	1	2	2	0	over ir	2
60	1	1	2	3	3	MIDDLE	UNEMPL	13495-1799	LOWER M	1	1	9	cleaning a	10	66	0	13	13	high	9	low	59	modera	2	0	0	2	5	1	0	0	6	8	9	6	mild	4	no	14	never	13	impulsive	positiv	positiv	1	searchi	1	3	3	1	criticis	3
55	1	1	1	2	1	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	13	rat killer w	10	69	0	13	13	high	9	low	59	modera	2	0	0	2	8,5,4	3	0	1	5	8	18	5	mild	3	no	22	rarely	14	impulsive	avoida	negati	0	searchi	0	2	2	0	criticis	3
65	1	1	2	0	1	plus 2	SEMI SKI	13495-1799	LOWER M	1	1	10	opc and b	10	68	1	13	14	high	8	low	63	high	1	0	0	1	4,5	2	1	1	10	7	8	6	mild	2	no	23	rarely	3	normal	proble	positiv	1	searchi	0	2	2	5	norma	1
62	1	1	1	4	1	MIDDLE	UNEMPL	8989-13494	UP-LOWE	1	1	6	ala poison	10	66	1	13	13	high	8	low	62	high	2	0	0	2	5	1	0	1	5	6	12	9	modera	8	mild	26	some ti	4	normal	proble	positiv	1	searchi	0	3	3	1	norma	1
64	1	1	2	0	3	ILLITERATE	UNEMPL	8989-13494	UP-LOWE	1	1	6	opc, psych	10	68	0	13	13	high	8	low	62	high	4	3	0	1	5,2	2	1	1	6	3	11	2	no	3	no	18	never	6	normal	proble	positiv	1	presen	1	2	2	1	norma	1
80	1	1	1	2	2	MIDDLE	UNEMPL	8989-13494	LOWER M	1	6	5	drowning	4	71	0	13	14	high	8	low	63	high	2	0	0	2	1,4,5	3	0	0	5	8	9	2	no	3	no	17	never	9	impulsive	positiv	positiv	1	presen	1	1	1	0	criticis	3
67	1	1	1	4	1	PRIMARY	UNEMPL	1803-5386	LOWER	1	5	9	hanging	12	70	1	13	14	high	8	low	63	high	3	0	0	3	5,2,6	3	0	1	4	6	10	11	modera	7	mild	27	some ti	4	normal	proble	positiv	1	searchi	1	3	3	4	over ir	2
75	1	1	2	2	1	MIDDLE	SEMI SKI	8989-13494	UP-LOWE	2	1	5	family con	12	70	1	13	14	high	9	low	61	high	3	1	0	2	5,2	2	0	1		6	12	2	no	3	no	18	never	16	impulsive	avoida	negati	0	searchi	0	2	2	0	norma	1
59	1	1	1	3	2	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	15	alcohol pe	10	68	0	12	13	high	8	low	62	high	2	1	0	1	5,4,2	3	1	1	14	6	12	8	modera	13	modera	25	some ti	7	normal	proble	positiv	1	presen	1	2	2	1	over ir	2
55	1	1	2	2	1	PRIMARY	UN- SKIL	8989-13494	UP-LOWE	1	1	10	phenal,fail	10	66	1	13	12	mod-hig	9	low	57	modera	3	0	1	3	8,5,4	3	0	1	2	7	9	6	mild	3	no	23	rarely	4	normal	proble	positiv	1	searchi	0	5	3	1	norma	1
59	1	3	1	2	3	ILLITERATE	UN- SKIL	8989-13494	UP-LOWE	1	1	23	opc	10	68	0	12	12	mod-hig	9	low	57	modera	1	0	0	3	5,4	2	0	0	4	9	8	2	no	2	no	13	never	19	impulsive	positiv	positiv	1	searchi	0	3	3	2	criticis	3
75	1	1	2	1	3	PRIMARY	UNEMPL	8989-13494	UP-LOWE	1	5	13	oleande, c	10	64	1	13	13	high	9	low	59	modera	3	0	0	1	1,4	2	1	1	14	6	11	13	severe	18	severe	33	often	5	normal	proble	positiv	1	searchi	0	1	1	1	hostilit	4
89	1	1	1	2	3	ILLITERATE	UNEMPL	1803-5386	LOWER	2	5	22	drowning,	4	71	0	13	14	high	8	low	63	high	3	0	0	13	2,4,5	3	1	1	12	3	8	2	no	2	no	19	never	8	normal	proble	positiv	1	presen	1	3	3	0	norma	1
78	1	1	1	4	2	PRIMARY	UNEMPL	13495-1799	UP-LOWE	1	5	13	corrosive	10	66	1	13	12	mod-hig	9	low	57	modera	2	0	0	2	5,4	2	0	1	3	7	9	11	modera	7	mild	30	often	5	normal	proble	positiv	1	searchi	0	4	4	2	over ir	2
56	1	1	2	6	1	MIDDLE	UN- SKIL	1803-5386	LOWER M	1	1	10	insecticide	10	68	0	12	12	mod-hig	10	moder	54	modera	3	0	0	1	5,1	1	1	0	11	8	12	4	no	3	no	16	never	18	impulsive	avoida	negati	0	searchi	0	1	1	4	criticis	3